JVC

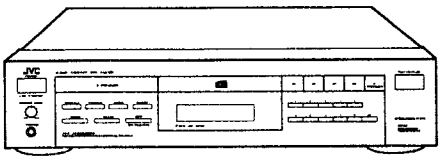
SERVICE MANUAL

COMPACT DISC PLAYER

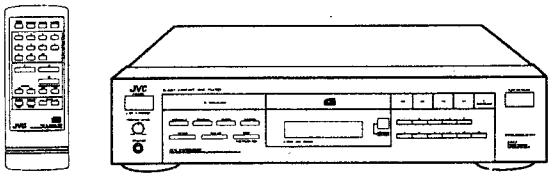
XL-V151TN/XL-V152BK
XL-V251TN/XL-V252BK

COMPACT disc DIGITAL AUDIO

COMPU LINK Component



(XL-V151TN/XL-V152BK)



COMPU LINK Remote Control Component

Note : * XL-V151TN/XL-V152BK and XL-V251TN/XL-V252BK are completely same in their structure , except for the remote controller .
* XL-V151TN and XL-V152BK are completely same in their structure , except for their outlook colours , also XL-V251TN and XL-V252BK .

Contents

Safety Precautions 1-2
Important for Laser Products 1-3
Instruction Book 1-4
Description of ICs 1-12
Internal Connections of FL Display Tube 1-21
Application Points for Grease 1-22
Disassembly Procedures 1-23
Flow of Functional Operation Until TOC is read 1-25
Maintenance of Laser Pickup 1-26
Replacement of Laser Pickup 1-26
Connection Diagram 1-27
Adjustment Procedures 1-28
Troubleshooting 1-30
Block Diagram ..... Insertion
Printed Circuit Board ..... Insertion
Schematic Diagram ..... Insertion
Parts List ..... Insertion

No. 20301U
Dec. 1991

MC-Service

Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorised in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits.
2. Any unauthorised design alterations or additions will void the manufacturer's guarantee ; furthermore the manufacturer cannot accept responsibility for personal injury or property damage resulting therefrom.
3. Essential safety critical components are identified by (⚠) on the Parts List and by shading on the schematics ,and must never be replaced by parts other than those listed in the manual. Please note however that many electrical and mechanical parts in the product have special safety related characteristics . These characteristics are often not evident from visual inspection . Parts other than specified by the manufacturer may not have the same safety characteristics as the recommended replacement parts shown in the Parts List of the service manual and may create shock , fire , or other hazards .
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

Warning

1. Service should be performed by qualified personnel only.
2. This equipment has been designed and manufactured to meet international safety standards.
3. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
4. Repairs must be made in accordance with the relevant safety standards.
5. It is essential that safety critical components are replaced by approved parts.
6. If mains voltage selector is provided, check setting for local voltage .

Important for Laser Products

1. CLASS 1 LASER PRODUCT
2. DANGER : Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
3. CAUTION : There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.
4. CAUTION : The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.
5. CAUTION : If safety switches malfunction, the laser is able to function.
6. CAUTION : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
7. CAUTION : The compact disc player provides a laser diode of wavelength 780-790nm and optical output power typical 3mW at the laser diode.

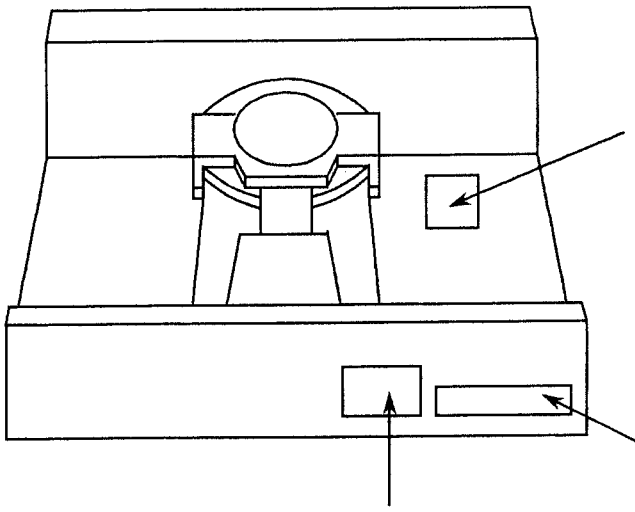
VARNING : Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

ADVARSEL : Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

ADVARSEL : Usynlig laserstråling ved åpning, når sikkerhetsbryteren er avslott. unngå utsettelse for stråling.

REPRODUCTION AND POSITION OF LABELS



WARNING LABEL
(Except for the U. S. A.)

DANGER: Invisible laser radiation when open and interlock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM. (e)

VARNING: Osynling laserstråling när denna del å öppnad och spärren är urkoppled. Betrakta ej stålen. (s)

ADVARSEL: Usynling laserstråling ved åbning, når sikkerhedsafbrydere er ude at funktion. Undgåudsættelse for stråling. (d)

VARO: Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen. (f)

CLASS 1
LASER PRODUCT

CLASSIFICATION LABEL
(Except for the U. S. A. and Canada)

CERTIFICATION
THIS PRODUCT COMPLIES WITH DHHS RULES 21 CFR SUBCHAPTER J APPLICABLE AT DATE OF MANUFACTURE .

CERTIFICATION PRINT BY DHHS
(Only for the U.S.A.)

FRONT PANEL

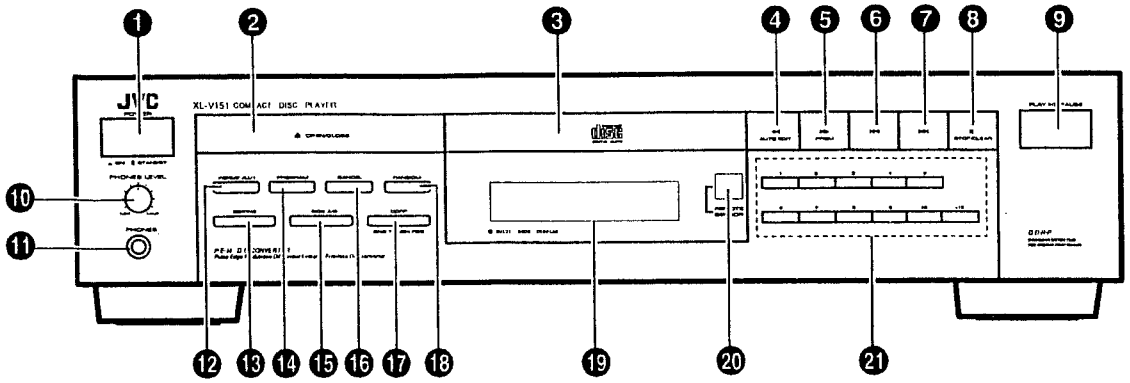


FIG. 1

DISPLAY

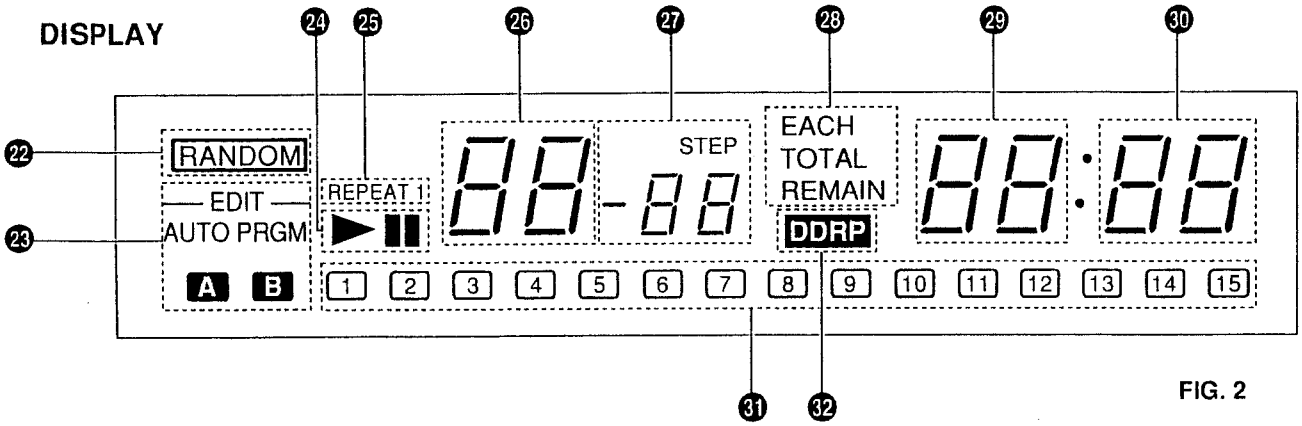


FIG. 2

REMOTE CONTROL UNIT

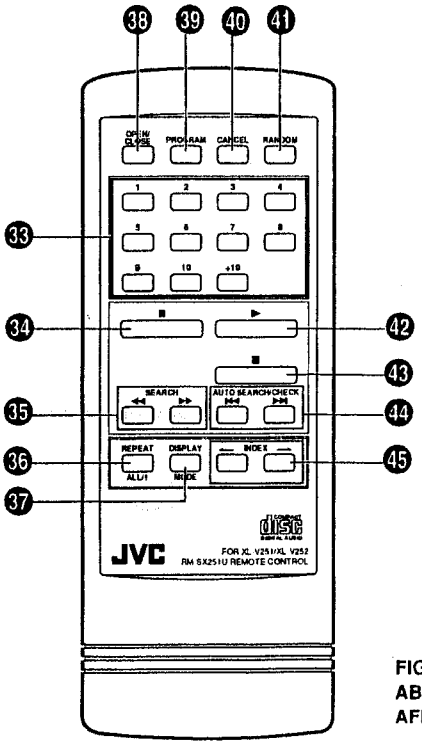


FIG. 3
ABB. 3
AFB. 3

COMPU LINK CONTROL SYSTEM

This is a convenient system was originated and developed by JVC. the following is a brief explanation of its major points.

Automatic Source Selection
When the provided remote cable are used for connecting this unit to other components which have COMPU LINK -1/SYNCHRO terminals, the switch-over of all system components is possible with simple one-touch of the source selector button of the JVC amplifier or receiver. By doing this, the corresponding component will start playing automatically. The source select button of the remote control unit or the select button of the desired component can also be use for this purpose.
When the components have been switch over, the previously used component will stop playing within five seconds.

Synchronized Recording
If a cassette deck with COMPU LINK-1/ SYNCHRO terminals is connected with the remote cable supplied, synchro recording becomes posibble.
Synchronized recording refers to the process in which the cassette deck starts recording in the synchronism with the CD player. Perform the synchronized recording as follows.

1. Set the cassette deck to the REC/PAUSE mode in accordance with the procedures in the instructions.
2. If you want programmed recordings, program the desired selections in any order you wish to hear them.
3. Press the [PLAY(▶ / ⏸ PAUSE)] button of the CD player. By doing so, the cassette deck is placed in the record mode and synchronized with the CD player for recording. Synchronized recording thus can be made possible.

Notes:
- **Synchronized recording stops automatically when the CD player stops playing.**
- **To cancel synchronized recording, press the [STOP/CLEAR (■)] button of the CD player or cassette deck.**

CAUTION:
- **When the REC/PAUSE mode is set by pressing [PAUSE (⏸)] button after pressing the [REC (○)] and [PLAY (▶)] buttons simultaneously, synchronized recording is not possible. For details, refer to the instructions of the cassette deck.**
- **Abnormal operation will result if the power supply of the component(s) is interrupted. If this happens, you must start all over again.**
- **Ensure that the COMPU LINK-1/SYNCHRO terminals of the individual components are connected with the provided remote cables. Also be sure to fully read the instructions for each component.**

DDRP (Dynamic Detection Recording Processor)

The Dynamics Detection Recording Processor (DDRP) detects the peak level of the music being performed and outputs the optimum recording level.
When the (DDRP) button is pressed, the DDRP indicator starts to flash, the letters "ddrp" run along the display and the volume is reset to the maximum value. Each time a new peak level is detected during peak search mode, the PHONES OUTPUT LEVEL setting is reduced and the optimum level is set. The time taken for peak search varies with the total performance time of the music being scanned, but is around two minutes for a 40 minute performance time.

DDRP Recording
The combination of the DDRP function and synchro recording makes recording on tape cassette very easy. There are two recording methods - according to which type of cassette deck is being used.

1. In combination with a DDRP compatible JVC cassette deck :
   Peak search is initiated by pressing the [DDRP] button. As soon as the peak search is terminated, recording starts. The cassette deck should be operated in accordance with the instructions supplied with it.
2. In combination with any JVC cassette deck not DDRP-compatible :
   Where connection is made to a cassette deck not DDRP-compatible, via the synchro terminals, pressing the [DDRP] button will start the recording process.
   In this case, the cassette deck input level will not be automatically set.
   Where a none DDRP-compatible cassette deck is used, a prelimina y recording should be made in order to ascertain ideal input levels - the input level being then set up in accordance with the instructions for the cassette deck. If the input-level knob is subsequently reset to the same position, this enables recording at the optimum level to be done, without resetting every time.

DDRP Cancel
Press the [OPEN/CLOSE (⏏)] button to cancel DDRP mode.

Note
- The graphic equalizer should not be used during DDRP recording. Using this facility will disturb the optimum recording level setting just found by the DDRP.
- Please do not turn off the power to the CD player while the DDRP mode is active. If this should be turned off by accident then the cassette deck should also be switched off for a few seconds in order to clear the DDRP recording mode from the cassette deck.
- When the cassette deck is connected via the synchro terminals, it is set in recording mode when DDRP is pressed. Take care, therefore, not to erase a tape by mistake.

Supplementary Notes
- *Whenever any addition or cancellation is made to the music tracks programme, the DDRP mode is cancelled.*
- *DDRP recording is automatically stopped when the CD player stops.*

BEFORE USE

Set the voltage selector to your local line voltage. (Fig. 6)
When this equipment is used in an area where the supply voltage is different from the preset voltage, reset the voltage selector to the correct position.
(Not provided on units for U.S.A., Canada, Australia, U.K. and Continental Europe.)

CHECKING YOUR LINE VOLTAGE (Except for U.S.A., Canada, Australia, U.K. and Continental Europe.)
Before inserting the power plug, please check this setting to see that it corresponds with the line voltage in your area. If it doesn't be sure to adjust the voltage selector switch to the proper setting before operating this equipment. the voltage selector switch is located on the rear panel.

CAUTION:
- Before setting the "Voltage selector switch" to proper voltage disconnect the power plug.

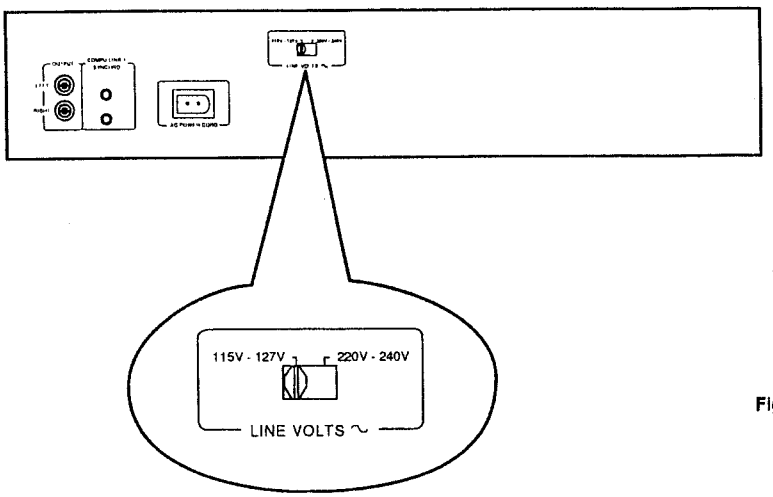


Fig. 6

HOW TO INSTALL THE BATTERIES

The service life of the batteries depends on the condition of use; the standard life is about one year.
When the batteries becomes weak, the effective distance of the remote control unit will become shorter. If this happens, replace the batteries with new ones.

- **How to install batteries**

1. Remove the rear cover of the remote control unit by pressing down on it with your thumb and simultaneously pulling it backwards, as shown in Fig. 7.

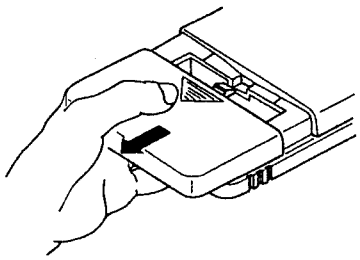


Fig. 7

2. Install batteries (AAA, R03, UM-4) as shown in Fig. 8.
   Be sure batteries are installed with correct polarity, (+) and (–).

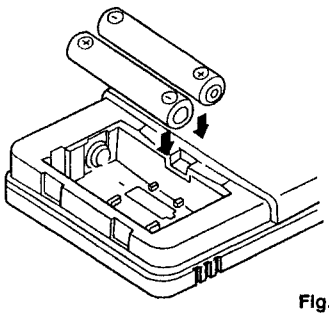


Fig. 8

3. Reinstall the rear cover of the remote control unit. Slide the rear cover back as shown in Fig.9.

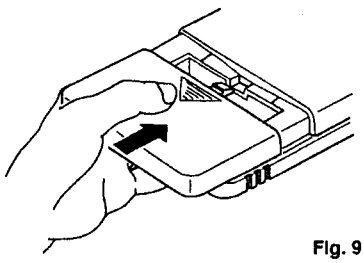


Fig. 9

Notes:
- **The lower the temperature, the shorter battery life.**
- **Battery replacement.**

- **Batteries**

Incorrect use of batteries can cause corrosion or damage. Note the following points to lengthen battery life.
1. Install batteries observing the correct polarity, (+) and (–).
2. Do not use new and old batteries simultaneously.
3. Batteries with similar shapes may have different voltage ratings. Be sure to use the correct batteries.
4. Remove batteries from the remote control unit if it will not be used for a long period of time.

CONNECTION DIAGRAM

- Do not connect the power plug unless all the connection is completed.
- Connect the audio plug firmly.
- The synchronized recording is only possible with JVC products which have the COMPU LINK-1/SYNCHRO terminals. To carry out synchronized recording, connect to the amplifier's CD terminal. For further details, consult your JVC dealer.
- The AC power cord is supplied and must be connected to the unit before use.

Connecting to the Analog Output Terminals

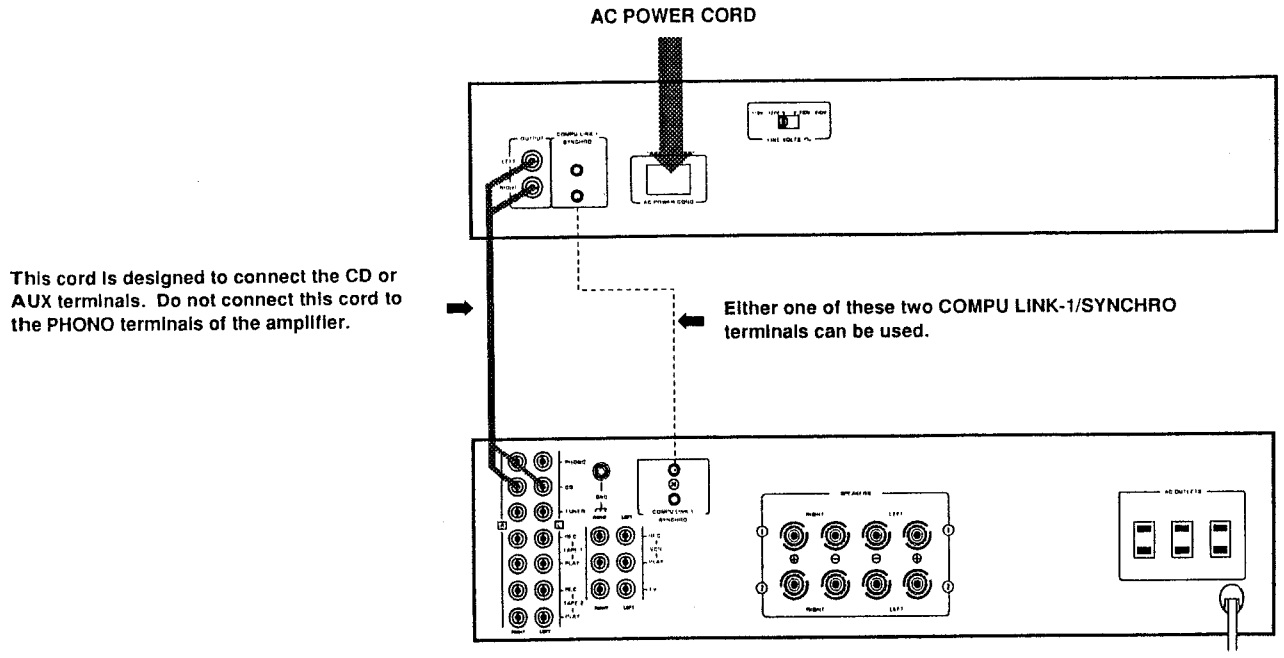

AC POWER CORD
This cord is designed to connect the CD or AUX terminals. Do not connect this cord to the PHONO terminals of the amplifier.
Either one of these two COMPU LINK-1/SYNCHRO terminals can be used.
An example of an amplifier

Fig. 10

(No. 20301) 1-7

MC-Service

DESCRIPTION AND FUNCTIONS

❶ **POWER (⏏ ON ■ STANDBY)**
Press to turn on the power, the display will light. Press again to turn the power off. The display will go off.
A small amount of power (2 watts) is consumed in the standby mode. To turn the power off completely, disconnect the power cord from the wall outlet.

❷ **OPEN/CLOSE (⏏)**
Press to move the disc platter in and out. Press once and the disc platter will move out; now you can load a disc. Press again to move the platter back in. The disc is now ready to be played.
If it is pressed during play, play will be interrupted. And the program will be erased from memory and the disc platter will come out.

❸ **Disc Platter**
Load the disc to be played.

❹ **(◀◀)**
When this button is pressed during play or pause mode, the CD player will begin to scan backwards. In such a case, when the button is kept pressed, the CD player will backward-search slowly for about 3 seconds, and then go into a higher speed search.

❺ **(▶▶)**
When this button is pressed during play or pause mode, the CD player will begin to scan forward. In such a case, when the button is kept pressed, the CD player will forward-search slowly for about 3 seconds and then go into a higher speed search.

❻ **(|◀◀)**
Press this button to locate the start of the current selection or to go back to the previous selection during play. Play will go back one selection each time the button is pushed. If the button is held down, play will continue to go back one selection at a time until the button is released.

❼ **(▶▶|)**
Press to go to the start of the next selection. Every time this button is pressed, the pickup goes forward by one selection. Holding the button down moves the pickup forward continuously.

❽ **STOP/CLEAR (■)**
Press to stop play. A few seconds after the disc has stopped rotating, the player goes into the standby mode with the track number "1" shown in the display window. The player is then ready to play.

❾ **PLAY ▶/ II PAUSE**
Press to start play. If the disc platter is out press this button, and disc platter will then move in and play will start (without pressing the [OPEN/CLOSE (⏏) button].
Press this button again to suspend play temporarily. The optical pickup stops and the disc continues to rotate. This status is called the pause mode.

❿ **PHONES LEVEL**
Adjust the volume of the head phones.

Note:
- **When listening to music by the headphones, be careful not to abuse your ears by setting the volume too high. Adjust the volume properly to obtain ear-pleasing listening.**

⓫ **PHONES**
Insert the headphones into this jack.

⓬ **REPEAT ALL/1**
Press this button to play one selection, all the selections or the programmed selections of the disc repeatedly.
When desiring all the selections, press the button once. "REPEAT" will be lit in the display window. When desiring one selection, press the button once again. "REPEAT 1" will be lit in the display window. To release this repeat play, press the [REPEAT ALL/1] button again.

⓭ **EDITING**
When editing the disc data in the cassette tape, the time interval can be established in advance in accordance with the tape length. When this button is pressed, "EDIT" appears in the display window.

⓮ **PROGRAM**
To program the sequence of the selections to be played, press this button while the CD player is in the standby mode. The PROGRAM indicator lights and up to 32 selections can be programmed.

⓯ **SIDE A/B**
Use this button to designate the tape side when programming for edit recording.

⓰ **CANCEL**
Press this button to cancel a programmed tune, each time it is pressed, one tune is cancelled.

⓱ **DDRP**
Press for DDRP recording. If the player is connected to a DDRP system compatible cassette deck, when this button is pressed, the optimum recording level is automatically set and recording is started.

⓲ **RANDOM**
When this button is pressed, the CD player will be ready for random play.

⓳ **Display Window (MULTI MODE DISPLAY)**
This shows the total number of selections on the disc, the total playing time, the elapsed playing time, the remaining playing time, various program data, etc.

⓴ **REMOTE SENSOR**
(for XL-V251TN/XL-V252BK only)

㉑ **10 key operating buttons**
To designate the desired track numbers or establish the time interval during the tape editing, use these buttons. If the desired number is 10 or less, use the [1] ~ [10] buttons. However, to assign a track number greater than 10, use the [+10] button and the [1] ~ [10] button.

Examples
- To assign the 25th track, press the [+ 10] button twice then press the [5] button.
- To assign the 30 minutes, press [+ 10] button twice then press the [10] button.

DISPLAY

㉒ **RANDOM**
Lights in RANDOM MODE.

㉓ **EDIT**
Lights during editing recording.
[EDIT AUTO] : Lights during Auto Edit Recording.
[EDIT PRGM] : Lights during Program Edit Recording.
A : Lights when the A side of the tape is designated.
B : Lights when the B side of the tape is designated.

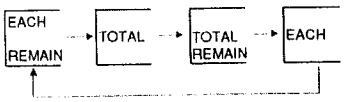
㉔ **PLAY/PAUSE Indicators**
▶ : Lights during play.
II : Lights in the pause mode.

㉕ **REPEAT**
Lights when the repeat play is ready.
REPEAT : Lights when the repeat play of all the selections is entered.
REPEAT 1 : Lights when the repeat play of only one selection is entered.

㉖ **TRACK**
Lights when all the selections of the disc are shown.
Shows the programmed selection numbers or the current selection number of the disc during programmed play.

㉗ **STEP**
Shows the numbers of memory steps of the programmed selections.

㉘ **TOTAL/EACH/REMAIN**
Each time the [DISPLAY MODE] button on the remote control unit is pressed, the indication changes in the following order.



EACH : Shows elapsed time for the each selection.
EACH REMAIN : Shows the remaining playing time of each selection. (Up to 31st selection can be displayed.)
TOTAL : Shows the elapsed playing time of the disc or the programmed selections.
TOTAL REMAIN : Shows the remaining playing time of the disc or the programmed selections. (Up to 31st selection can be displayed.)

㉙ **Time Indicator (MINUTE)**
Shows the total playing time, elapsed playing time, or the remaining playing time in minutes.

㉚ **Time Indicator (SECOND)**
Shows the total playing time, elapsed playing time, or the remaining playing time in seconds.

㉛ **Program Chart**
This chart indicates the number of each selection on the disc.
When a selection is programmed, the selection number lights.

㉜ **DDRP INDICATORS**
DDRP : Blinks during DDRP operation and lights steadily during DDRP recording.

REMOTE CONTROL UNIT

The remote control range is approximately 7 metres (23 ft.)
Pointing the remote control on an angle to the receiver, will reduce the useful distance of the remote control.
Use gentle but firm pressure when pressing the remote control buttons.

If you can not do remote control, the disc platter sliding out, the REMOTE SENSOR might be behind the disc platter. So operate as below.

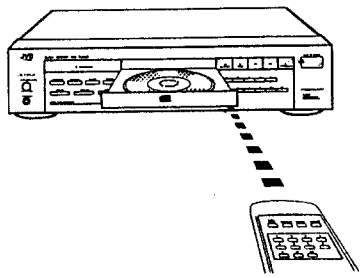


Fig. 13

Notes:
- **The provided remote control unit (RM-SX251U) has operating buttons which are basically identical with those of the CD player. The differences are the following button which are not on the CD player.**
- **[STOP/CLEAR (■)] button on the remote control unit cannot cancel the programmmed selections.**

㉝ **10 key operating buttons**
To designate the desired track numbers or establish the time interval during the tape editing, use these buttons. If the desired number is 10 or less, use the [1]~[10] buttons. However, to assign a track number greater than 10, use the [+10] button and the [1]~[10] buttons.

Example
- To assign the 25th track, press the [+10] button twice then press the [5] button.

㉞ **Pause (II)**
Press to stop play temporarily.

Note:
- **To continue playing, press the [PLAY (▶)] button again.**

㉟ **SEARCH (◀◀, ▶▶)**
◀◀ : Scans backward quickly during play.
▶▶ : Scans forward quickly during play.

㊱ **REPEAT ALL/1**
Press this button to play one selection, all the selections or the programmed selections of the disc repeatedly.

㊲ **DISPLAY MODE**
This button changes the time data in the display window.

㊳ **OPEN/CLOSE (⏏)**
Press to move the disc platter in and out.

㊴ **PROGRAM**
To program the sequence of the selections to be played, press this button while the CD player is in the standby mode. The PROGRAM indicator lights and up to 32 selections can be programmed.

㊵ **CANCEL**
Press this button to cancel the programmed tune.Each time it is pressed, one tune is cancelled.

㊶ **RANDOM**
When this button is pressed, the CD player will be ready for random play.

㊷ **Play (▶)**
Press to start play.

㊸ **Stop/Clear (■)**
Press to stop play. However, this does not clear the program or the program edit recording.

㊹ **AUTO SEARCH/CHECK (|◀◀, ▶▶|)**
|◀◀ : Skips to the beginning the previous track.
▶▶| : Skips to the beginning of the next track.
It can be also used to check the program order, or to cancel part of the program.

㊺ **INDEX**
(—): To start play from the desired index point, scan backward to the desired index point with this button.
(—): To start play from the desired index point, scan forward to the desired point with this button.

MC-Service

HOW TO OPERATE

Preliminary Operation

1. Turn on and adjust components such as an amplifier.
2. Turn on the CD player.
3. Press the [OPEN/CLOSE (≜)] button to slide the disc platter out.
4. With its label side up, load a disc on the disc platter.
5. Press the [OPEN/CLOSE (≜)] button again to slide the disc platter in.

Notes:

- **The display shows the number of tracks and total playing time of the disc for 3 seconds.**
- **You can also close the disc platter by pressing the [PLAY -/J PAUSE] button. In such a case, play starts immediately with the first selection of the disc.**

To Play From the First Selection

Press the [PLAY ▶/II PAUSE] button.

To Play From Any Desired Selection

1. Designate the desired selection number by the 10 key operating buttons.

Examples:

- To assign the 25th track, press the [+10] button twice and then press the [5] button.
- To assign the 30th track, press the [+10] button twice and then press the [10] button.

The same operation can also be carried out using [(|◀◀, ▶▶|)] button.

1. Designate the desired selection number by the [(▶▶|)] button.
2. Press the [PLAY ▶/II PAUSE] button.

To Stop Play Temporarily

Press the [PLAY ▶/II PAUSE] button.

Note:

- **To continue playing, press the [PLAY -/J PAUSE] button again.**

To Switch Selections During Play

- **To skip to the next selection**
  Press the [(▶▶|)] button.
- **To skip to the previous selection**

1. Press the [(|◀◀)] button once and locate the start of the current selection.
2. Immediately after step 1, press the [(|◀◀)] button again.

To Repeat Play

- **To repeat all the selections**

1. Press the [REPEAT ALL/1] button once.
2. Press the [PLAY ▶/II PAUSE] button.

- **To repeat one selection**

1. Press the [REPEAT ALL/1] button twice.
2. Designate the desired selection number by the [(▶▶|)] button.
3. Press the [PLAY ▶/II PAUSE] button.

To Stop Play

Press the [STOP/CLEAR (■)] button.

To Remove the Disc

Press the [OPEN/CLOSE (≜)] button.

To Program Play

1. Press the [STOP/CLEAR (■)] button.
2. Press the [PROGRAM] button.
3. Program any desired selections with the 10 key operating buttons.
4. Press the [PLAY ▶/II PAUSE] button.

To Correct the Program

- **To correct all the program**

1. Press the [STOP/CLEAR (■)] button.
2. Start programming again from the beginning.

- To correct each content of the program during programmiong

1. Press the [(|◀◀)] button to go back to the program which needs to be cancelled.
2. Press the [CANCEL] button.
3. Program a desired selection with the 10 key operating buttons.
   * Newly programmed selection is added to the last of the program.

To Check the Program

Press the [(|◀◀ , ▶▶|)] button.

Notes:

- **A maximum of 32 out of 99 tunes can be selected.**
- **When the programmed play is performed, the selection number programmed first and the total playing time of programmed selections are displayed.**
- **The total playing time display is useful when making recording from the CD player.**
- **When programming is carried out with the disc platter out, the total playing time of the programmed selections will not be displayed.**
- **When the total playing time of all the selected tunes exceeds 99 minutes and 59 seconds, the time display will be disabled and only the center bar will be displayed.**
- **Pressing the [(::|)] button when in the programmed play causes the unit to skip to the next programmed selection.**
- **To stop temporarily during programmed play, press the [PLAY -/J PAUSE] button. Press this button again to restart.**

To Random Play

1. Press the [STOP/CLEAR (■)] button.
2. Press the [RANDOM] button.
3. Press the [PLAY ▶/II PAUSE] button.

To Cancel the part of Random Play

1. Select the track(s) you want to cancel with the 10 key operating buttons.

To add cancelled track(s) to Random Play

1. Select the cancelled track(s) you want to add to Random Play with the 10 key operating buttons or [(|◀◀, ▶▶|)] button.
2. Press the [PROGRAM] button.

To Perform Synchronized Recording

Synchronized recording is possible by connecting the cassette deck to the COMPU LINK-1/SYNCHRO terminals of the CD player through the remote cable.

1. Press the [REC (○)] and [PAUSE (II)] buttons of the cassette deck.
2. Press the [PLAY ▶/II PAUSE] button of the CD player to start the synchronized recording.
3. Press the [STOP/CLEAR (■)] button to stop recording.

To record using DDRP

Whenever the remote cable supplied is connected to the COMPU LINK-1/SYNCHRO terminals housed in a DDRP-compatible cassette deck, DDRP recording mode is available.
By pressing the [DDRP] button, recording is automatically started as soon as the peak level search routine is completed.

To Perform Edit Recording

- **Auto Edit Recording**
  Automatically distributes and edits the tracks accommodated within the specified time to sides A and B.

1. Set a disc and press the [STOP/CLEAR (■)] button.
2. Press the [EDITING] button to light AUTO.
3. Set the recording time corresponding with the tape used, using the numerical key buttons.

Examples:

- To assign the 54 minutes, press [+10] button fifth then press the [4] button.
- To assign the 90 minutes, press [+10] button eight then press the [10] button.
  When the length of tape corresponds with the time displayed then the [SIDE A/B] button should be pressed.

4. Press the [DDRP] button.
   (When automatic setting of the recording level is not required, set the cassette deck to standby (REC PAUSE) and press the CD player [PLAY ▶ / II PAUSE] button.)
   (When the synchro terminals are not connected, once the peak search is completed, set the cassette deck to record, and press the CD player [PLAY ▶ / II PAUSE] button.)

   When the side A music programme has terminated, recording is automatically stopped.
   If side B is also to be recorded, turn the tape over and again press the [DDRP] button. (now recording will start immediately)

Program Edit Recording
Edits the tracks accommodated within the specified time in the desired track order.

1. Set a disc and press the [STOP/CLEAR (■)] button.
2. Press the [EDITING] button to light PRGM.
3. Set the recording time corresponding with the tape used, using the numerical key buttons.

Examples:

- To assign the 54 minutes, press [+ 10] button fifth then press the [4] button.
- To assign the 60 minutes, press [+ 10] button fifth then press the [10] button.

When the length of tape corresponds with the time displayed then the [SIDE A/B] button should be pressed.

4. Select the tracks to be recorded on side A, using the numerical key buttons.
5. Press the [SIDE A/B] button.
6. Select the tracks to be recorded on side B, using the numerical key buttons.
7. Press the [DDRP] button.
   (When automatic setting of the recording level is not required, set the cassette deck to standby (REC PAUSE) and press the CD player [PLAY ▶/ II PAUSE] button.

   When the synchro terminals are not connected, once the peak search is completed, set the cassette deck to record, and press the CD player [PLAY ▶/ II PAUSE] button.)

   When the side A music programme has terminated, recording is automatically stopped.
   If side B is also to be recorded, turn the tape over and again press the [DDRP] button (now recording will start immediately).

Connecting to a cassette deck not DDRP-compatible, via the synchro terminals
Where connection is made to a cassette deck not DDRP compatible, via the synchro terminals, the recording process will be started by pressing the [DDRP] button.
In this case, the cassette deck input level will not be automatically set.
A preliminary recording should be made in order to ascertain input levels - the input level being then set up in accordance with the cassette deck instruction manual. Subsequently setting the input-level knob to the same position enables recording at the optimum level without a resetting process every time.

TROUBLESHOOTING

What appears to be a malfunction may not always be serious.
Make sure first.

Although the disc is inserted in the CD player, DISPLAY shows no data.
Is the disc placed upside down?
– Place the disc on the disc tray with its label side up.
Selections cannot be programmed.
Is the "PROGRAM" indicator lit?
– Press the [PROGRAM] button.
The remote control unit does not function.
Are the batteries fresh?
– Replace the batteries with new ones.
The sound is intermittent and is harsh to the ear.
Is the disc dirty?
– Wipe off the surface with a soft cloth.
Is the disc scratched?
– Replace the disc with a new one.
Is the disc warped?
– Replace the disc with a new one.

SPECIFICATION

System	: Compact disc player
Signal detection system	: Non-contact optical system
Number of channels	: 2 channels
Frequency response	: 2 Hz ~ 20,000 Hz
Dynamic range	: 98 dB (1 kHz)
Signal/noise ratio	: 106 dB (at digital 0)
Channel separation	: 94 dB (1 kHz)
Harmonic distortion	: 0.0025 % (1 kHz)
Wow and flutter	: Less than measurable limit
Output level	: 2.0 Vrms (full scale)
Number of program steps	: 32 steps
Dimensions	: 435 (W) x 102 (H) x 273.5 (D) mm (17-3/16" x 4-1/16" x 10-3/4")
Weight	: 3.5 kg (7.8 lbs)

Accessories
: Signal cord (1 m • 3.28 ft.) 1
: Remote cable (1 m • 3.28 ft.) 1
For XL-V251TN/XL-V252BK
: Remote control unit (RM-SX251U) 1
: Battery (AAA, R03, UM-4) ...2

Design and specifications subject to change without notice.

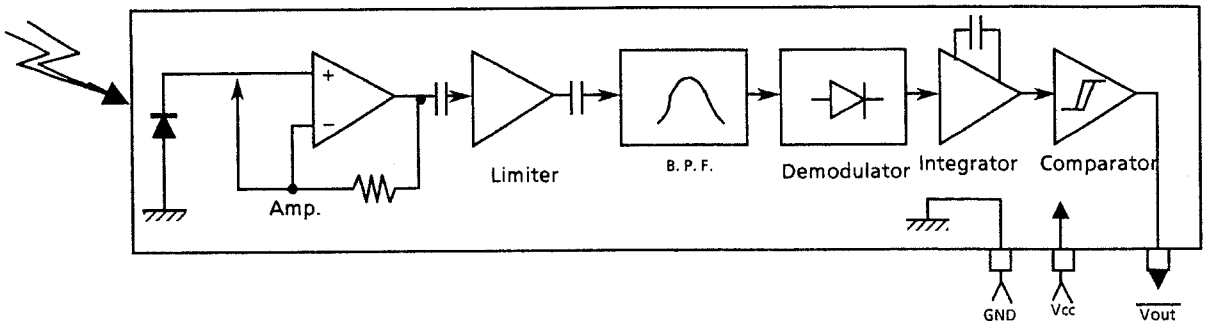
POWER SPECIFICATIONS

Areas	Line Voltage & Frequency	Power Consumption
U.S.A.	AC120V ~, 60Hz	11 Watts
U. K.	AC240V ~, 50Hz	11 Watts
Australia	AC240V ~, 50Hz	11 Watts

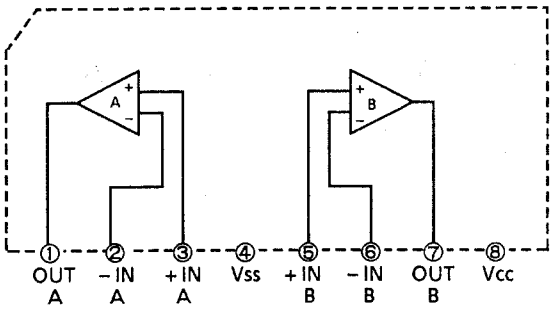
MC-Service

Description of ICs

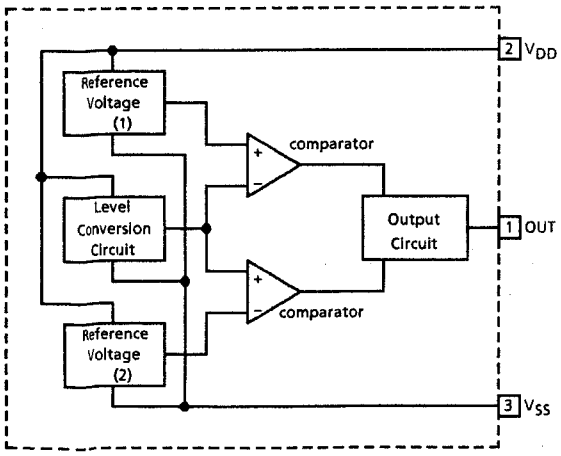
■ GP1U501X (IC203) : Receiver for remote controller (not use for XL-V151TN/XL-V152BK)



■ M5218AL (IC303, IC304, IC603) : Dual OP Amp.
VC4580L (IC305)



■ MN1281(IC202) : Reset IC



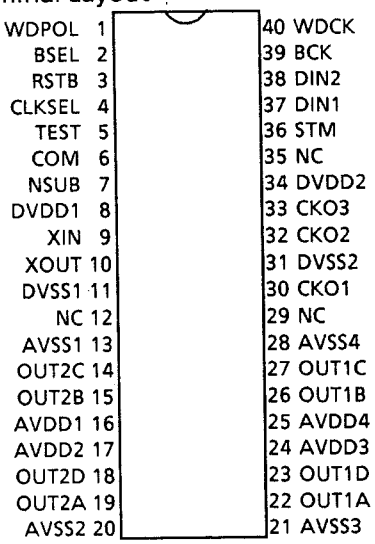
Pin No.	Pin Name	Functions
1	OUT	Reset signal output : Low level is output when resetting : High level is output when cancelling the reset.
2	V_{DD}	Power supply
3	V_{SS}	Ground

■ JCE4501(IC302) : D / A Converter

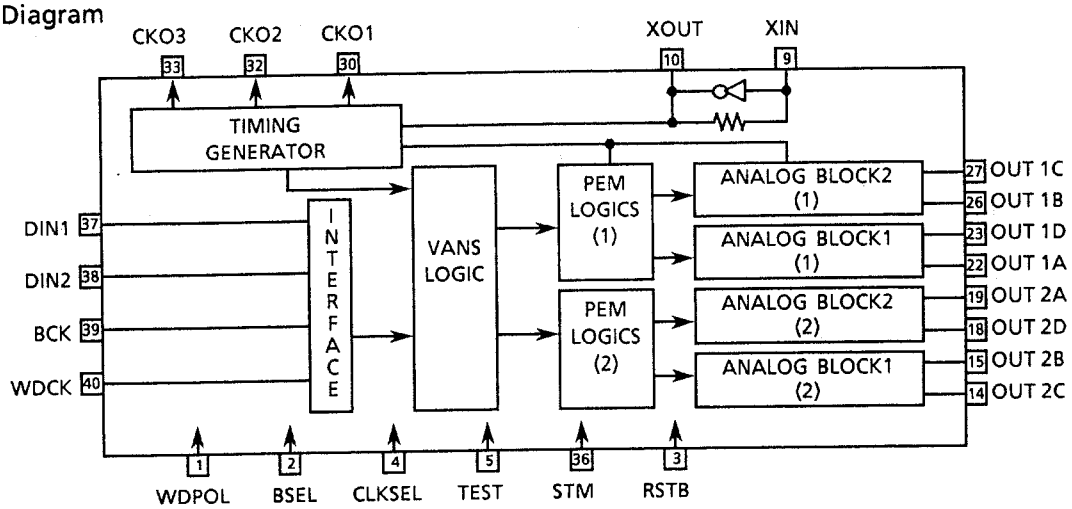
1. Outline

The JCE4501 is a CMOS digital-analog converter with independent left and right channels. It was developed for PCM digital audio equipment. It features pulse edge modulation (PEM) and Victor advanced noise shaping (VANS) for resolution equipment to 20 bits(0-20kHz) and a low distortion ratio. At JVC, this type of digital-analog converter is called a DD converter.

2. Terminal Layout



3. Block Diagram



4.Pin Function Description

Pin No	Symbol	I/O	Description	Pin No	Symbol	I/O	Description
1	WDPOL	I	Word data polarity switching pin	21	AVSS3	--	Analog ground pin 3
2	BSEL	I	H:CDX2554P format,L: YM3414 format	22	OUT1A	O	1A PEM output pin
3	RSTB	I	Reset pin (low active)	23	OUT1D	O	1D PEM output pin
4	CLKSEL	I	H: 256fs mode,L: 384fs mode	24	AVDD3	--	Analog power supply pin 3
5	TEST	I	Test mode switching pin	25	AVDD4	--	Analog power supply pin 4
6	COM	I	COM board voltage fastening pin	26	OUT1B	O	1B PEM output pin
7	NSUB	I	Silicon board voltage fastening pin	27	OUT1C	O	1C PEM output pin
8	DVDD1	--	Digital power supply pin 1	28	AVSS4	--	Analog ground pin 4
9	XIN	I	Crystal oscillator input pin	29	NC	--	To ground
10	XOUT	O	Crystal oscillator output pin	30	CKO1	O	Clock output pin 1(384fs output)
11	DVSS1	--	Digital ground pin 1	31	DVSS2	--	Digital ground pin 2
12	NC	--	To ground	32	CKO2	O	Clock output pin 2(192fs output)
13	AVSS1	--	Analog ground pin 1	33	CKO3	O	Clock output pin 3(128fs output)
14	OUT2C	O	2C PEM output pin	34	DVDD2	--	Digital power supply pin 2
15	OUT2B	O	2B PEM output pin	35	NC	--	Non connection
16	AVDD1	--	Analog power supply pin 1	36	STM	I	Stereo/Monaural switching pin. H: stereo, L: left channel,reversed polarity left channel
17	AVDD2	--	Analog power supply pin 2	37	DIN1	I	Left channel 18-bits 8Fs serial data input
18	OUT2D	O	2D PEM output pin	38	DIN2	I	Right channel 18-bits 8Fs serial data input
19	OUT2A	O	2A PEM output pin	39	BCK	I	Bit clock input pin
20	AVSS2	--	Analog ground pin 2	40	WDCK	I	Word clock input pin

MC-Service

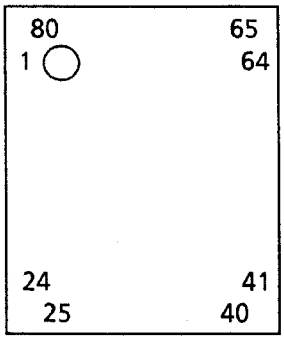
■ CXD2500AQ(IC401) : Digital Signal Processor

1. Outline

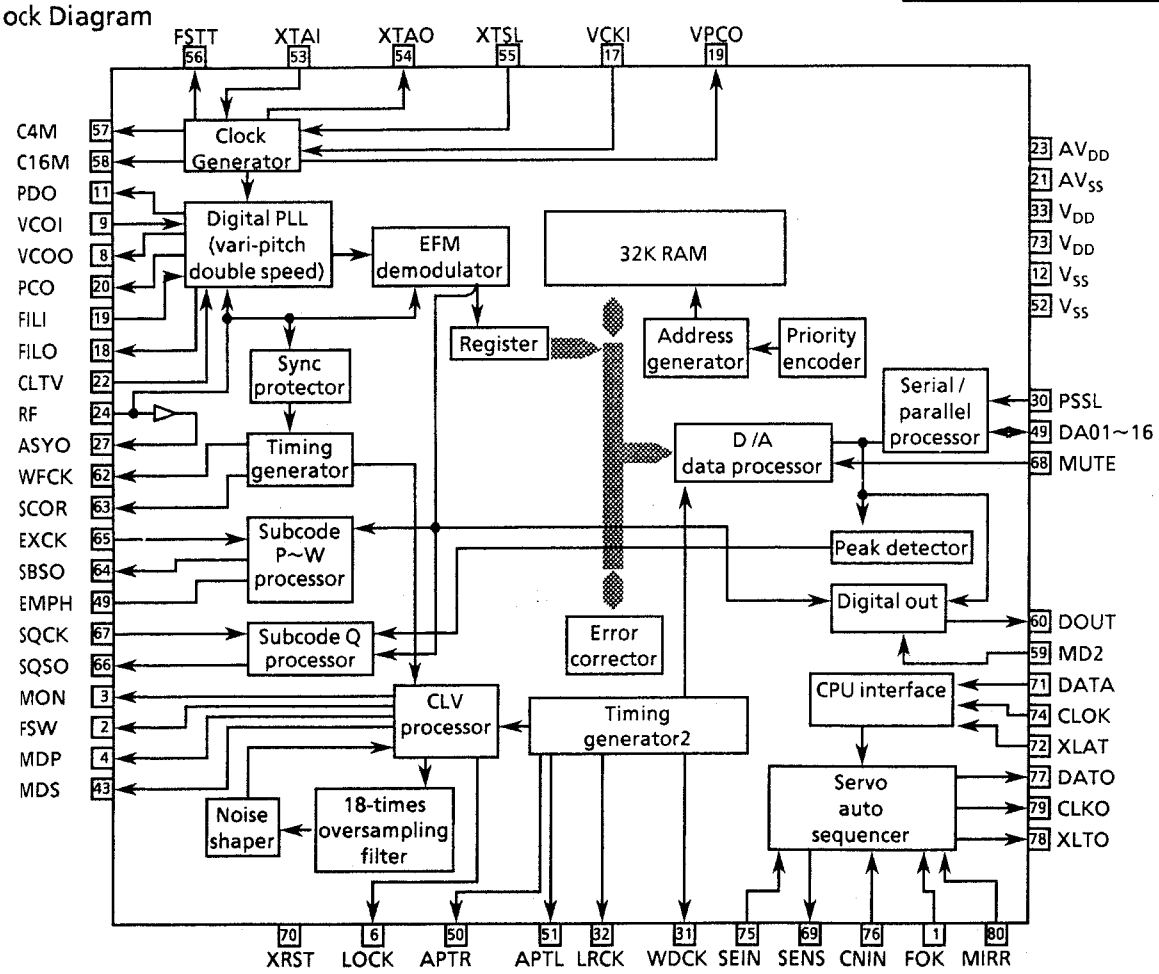
The CXD2500AQ is a digital signal processsing LSI designed for use in compact disc players. It has the following functions:

- All digital signals for regeneration are processed using one chip.
- The built-in RAM enables high-integration mounting.
- Generation by the use of a digital PLL of bit clock pulses for strobing the EFM signal.
- EFM data demodulation
- Subcode demodulation and subcode Q data error detection
- Digital spindle servo system (incorporating an oversampling filter)

2.Terminal Layout (TopView)



3.Block Diagram



Notes:

- The data at the 64-bit slot is output in 2's complements on an LSB-first basis. The data at the 48-bit slot is output in 2's complements on an MSB-first basis.
- GTOP monitors the state of Frame Sync protection. ("H" : Sync protection window released)
- XUGF is a negative Frame Sync pulse obtained from the EFM signal before Frame Sync protection is effected.
- XPLCK is an inversion of the EFM PLL clock. The PLL is designed so that the falling edge of XPLCK coincides with a change point of the EFM signal.
- The GFS signal turns "H" upon coincidence between Frame Sync and the timing of interpolation protection.
- RFCK is a signal generated at 136-μs periods using a crystal oscillator.
- C2PO is a signal to indicate a data error.
- XRAOF is a signal issued when a jitter margin of ± 28F is exceeded by the 32K RAM.

4. Pin Function Description

Pin No.	Symbol	I/O	Description
1	FOK	I	Focus OK input pin. Used for SENS output and servo auto sequencer.
2	FSW	O	Non connection
3	MON	O	Output for spindle motor ON / OFF control.
4	MDP	O	Output for spindle servo control.
5	MDS	O	Output for spindle servo control (Non connection).
6	LOCK	O	This terminal is "H" when the GFS signal sampled at 460Hz is "H". It turns "L" when the GFS signal turns out "L" 8 or more times in succession.
7~9	—	--	Non connection
10	TEST	I	Test pin (Normally at 0V)
11	PDO	O	Output of charge pump for analog EFM PLL (Non connection).
12	Vss	--	GND
13~16	—	--	Non connection
17	VCKI	I	Clock input from external VCO for vari-pitch control.fc = 16.9344MHz. Connected to GND.
18	FILO	O	Output of filter for masterPLL (Slave = Digital PLL)
19	FILI	I	Input to filter for master PLL.
20	PCO	O	Output of charge pump for master PLL.
21	AVss	--	Analog GND
22	CLTV	I	VCO control voltage input for master PLL.
23	AV_{DD}	--	Analog power supply
24	RF	I	EFM signal input
25	TEST2	I	TEST pin (Connected to GND)
26	TEST3	I	TEST pin (Connected to GND)
27	ASYO	O	EFM full-swing output
28	TEST4	I	TEST pin (Connected to GND)
29	NC	--	Non connection
30	PSSL	I	Input used to switch the audio data output mode."L" for serial output,"H" for parallel output.
31	WDCK	O	D / A interface for 48-bit slot. Word clock f = 2Fs.
32	LRCK	O	D / A interface for 48-bit slot. LR clock f = Fs.
33	V_{DD}	--	Power supply
34	DATA	O	Output DA16(MSB) when PSSL = 1 or serial data from 48-bit slot(2's completements,MSB first) when PSSL = 0.
35	BCLK	O	Output DA15 when PSSL = 1 or bit clock from 48-bit slot when PSSL = 0.
36~51	—	--	Non connection
52	VSS	--	GND
53	XTAI	I	Input of 16.9344MHz Xtal oscillation circuit or 33.8688MHz input.
54	XTAO	O	Output of 16.9344 MHz Xtal oscillation circuit.
55	XTSL	I	Xtal selection input pin. "L" for 16,344MHz Xtal, "H" for 33.8688 MHz Xtal.
56~58	—	--	Non connection
59	MD2	I	Digital-Out ON/OFF control. "H" for ON, "L" for OFF.
60	DOUT	O	Digital-Out output pin. Non connection
61,62	—	--	Non connection
63	SCOR	O	Turns "H" when subcode Sync S0 or S1 is detected.
64	SBSO	O	Serial output of Sub P ~ W.
65	EXCK	I	Clock input for reading SBSO.
66	SQSO	O	Outputs 80-bit Sub Q and 16-bit PCM peak-level data.
67	SQCK	I	Clock input for reading SQSO.
68	MUTE	I	"H" for muting, "L" for release.
69	SENS	O	SENS output to CPU.
70	XRST	I	System reset. "L" for resetting.
71	DATA	I	Inputs serial data from CPU.
72	XLAT	I	Latches serial data input from CPU at falling edge.
73	V_{DD}	--	Power supply(+ 5V)
74	CLOK	I	Inputs serial data transfer clock from CPU.
75	SEIN	I	Inputs SENSE from SSP(IC601). SSP : Servo Signal Processor
76	CNIN	I	Inputs track jump count signal.
77	DATO	O	Outputs serial data to SSP.
78	XLTO	O	Latches serial data output to SSP at falling edge.
79	CLKO	O	Outputs serial data transfer clock to SSP.
80	MIRR	I	Inputs mirror signal to be used by auto sequencer when jumping 128 or more tracks.

MC-Service

■ CXA1372S (IC601) : Servo Signal Processing Amplifier

1.Outline

The CXA1372S is a bipolar IC developed for RF signal processing (focus OK, mirror, defect detection, EFM comparator) and servo control.

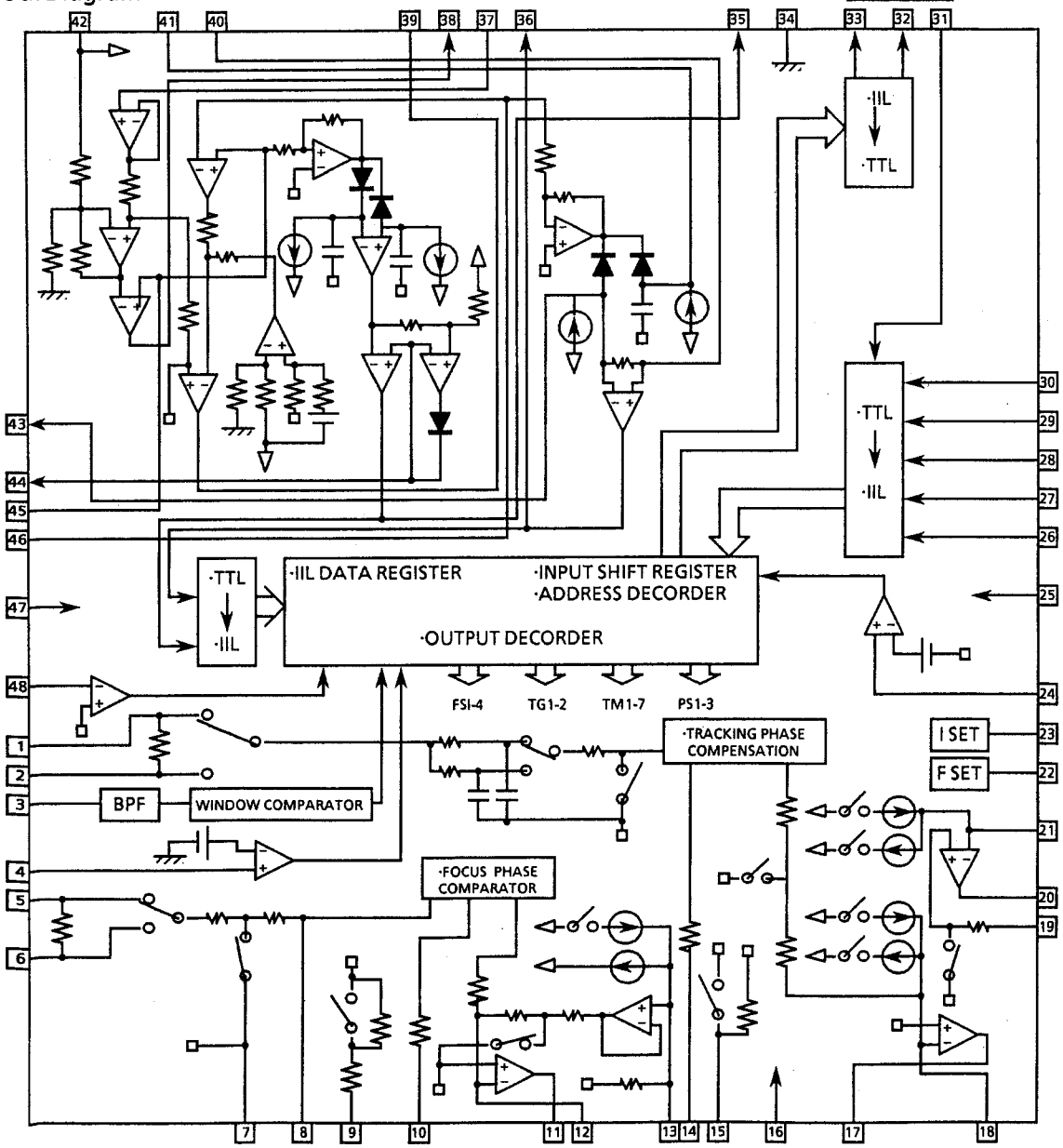
2.Functions

- Auto asymmetry control
- Focus OK detection circuit
- Mirror detection circuit
- Defects detection, counter measures circuit
- EFM comparator
- Focus servo control
- Tracking servo control
- Sled servo control

3.Terminal Layout

TE	1	48	TZC
TDFCT	2	47	DVEE
ATSC	3	46	RFO
FZC	4	45	RFI
FE	5	44	CP
FDFCT	6	43	CB
VC	7	42	DVCC
FGD	8	41	CC2
FS3	9	40	CC1
FLB	10	39	FOK
FEO	11	38	EFM
FE –	12	37	ASY
SRCH	13	36	DFCT
TGU	14	35	MIRR
TG2	15	34	DGND
AVCC	16	33	SENS
TAO	17	32	C.OUT
TA –	18	31	XRST
SL +	19	30	DATA
SLO	20	29	XLT
SL –	21	28	CLK
FSET	22	27	LOCK
ISET	23	26	DIRC
SSTOP	24	25	AVEE

4.Block Diagram



5.Pin Function Description

Pin No	Symbol	I/O	Description
1	TE	I	Input pin of tracking error amplifier.
2	TDFCT	I	Capacitor connecting pin for time constant during defects.
3	ATSC	I	Window comparator input pin for ATSC detection.
4	FZC	I	Pin for focus zero-cross comparator input.
5	FE	I	Input pin of focus error.
6	FDFCT	I	Capacitor connecting pin for time constant during defect functions.
7	VC	I	Center voltage input pin. For dual power: GND For single power supply: (VCC + GND)/2
8	FGD	I	Connect a capacitor between this pin and pin3 to reduce high-frequency gain.
9	FS3	I	The high-frequency gain of the focus servo is switched through FS3 ON and OFF.
10	FLB	I	Time constant external pin to raise the low bandwidth of the focus servo.
11	FEO	O	Focus drive output.
12	FE-	I	Inverse input for focus amplifier.
13	SRCH	I	Time constant external pin for formation of focus search waveform.
14	TGU	I	Time constant external pin for the selection of tracking high band gain.
15	TG2	I	Time constant external pin for the selection of tracking high band gain.
16	AVCC	--	Power supply
17	TAO	O	Tracking drive output.
18	TA-	I	Inverse input pin for tracking amplifier.
19	SL+	I	Non- inverse input pin for sled amplifier.
20	SLO	O	Sled drive output.
21	SL-	I	Inverse input pin for sled amplifier.
22	F SET	I	Pin to set peak frequency of focus tracking phase compensation and fo of CLV LPF.
23	I SET	I	Current is input to determine focus search, track jump, and sled kick height.
24	S STOP	I	Limit SW ON/OFF signal detection pin for disc inner periphery detection.
25	AVEE	--	-5V
26	DIRC	I	Pin for one-track jump. Contains 47kΩpull-up resistor.
27	LOCK	I	At "L" sled runaway prevention circuit operate. Contains a 47kΩpull-up resistor.
28	CLK	I	Serial data transfer clock input from CPU.
29	XLT	I	Latch input from CPU.
30	DATA	I	Serial data input from CPU.
31	XRST	I	Reset input pin, reset at "L".
32	C.OUT	O	Track number count signal output.
33	SENS	O	Outputs FZC, AS, TZC and S STOP through command from CPU.
34	DGND	--	GND
35	MIRR	O	MIRR comparator output pin.
36	DFCT	O	Output pin of DEFECT comparator.
37	ASY	I	Input pin of auto asymmetry control.
38	EFM	O	Output pin of EFM comparator.
39	FOK	O	Output pin of FOK comparator.
40	CC1	I	Output pin of DEFECT bottom hold.
41	CC2	O	Input pin for the capacitance coupled output of DEFECT bottom hold.
42	DVCC	--	-5V
43	CB	I	Connection pin of DEFECT bottom hold capacitor.
44	CP	I	Connecting pin of MIRR hold condenser. Non-inverted input pin of MIRR comparator.
45	RFI	I	Input pin with coupling capacitor where RF summing amplifier output is connected.
46	RFO	O	Output pin of RF summing amplifier and check point of eye pattern.
47	DVEE	--	-5V
48	TZC	I	Input pin of tracking zero-cross comparator.

MC-Service

■ CXD2554P(IC301) : Digital Filter

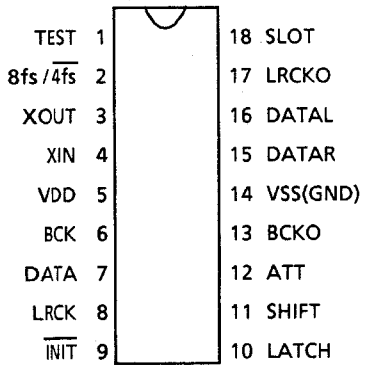
1. Outline

The CXD2554P is a 4- and 8-times oversampling digital filter LSI for a compact disc player. It has the following functions.

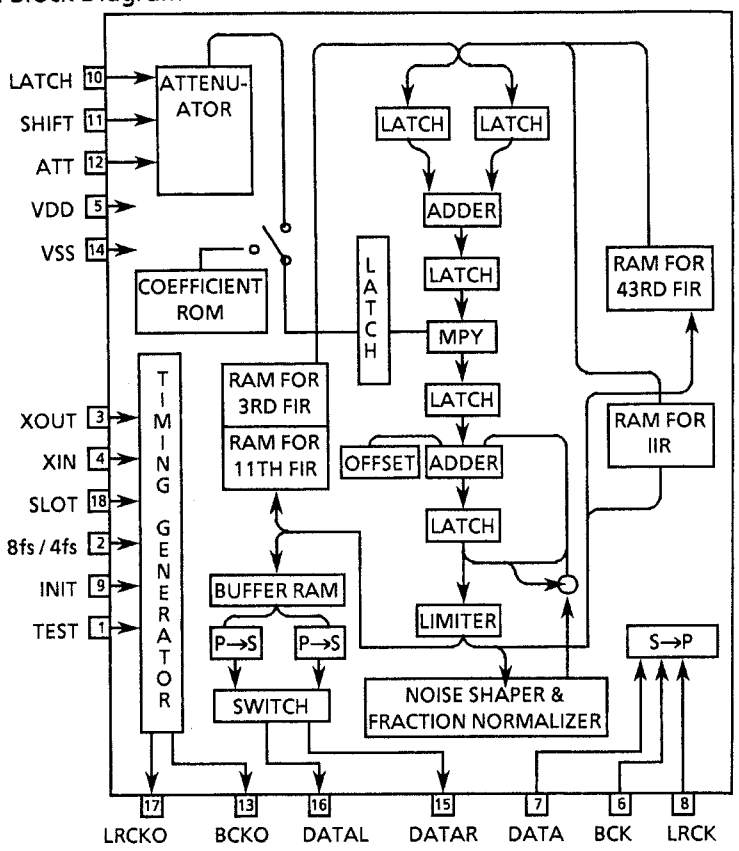
- 4- and 8-times digital filter
- De-emphasis function
- Attennuating function (Built-in 1st noise shaper)
- Digital offset function
- I / O format

Input: 2's complement MSB first (serial)
Output: 2's complement MSB first (serial)
(16-or18-bit slot selectable)

2. Terminal Layout



3. Block Diagram



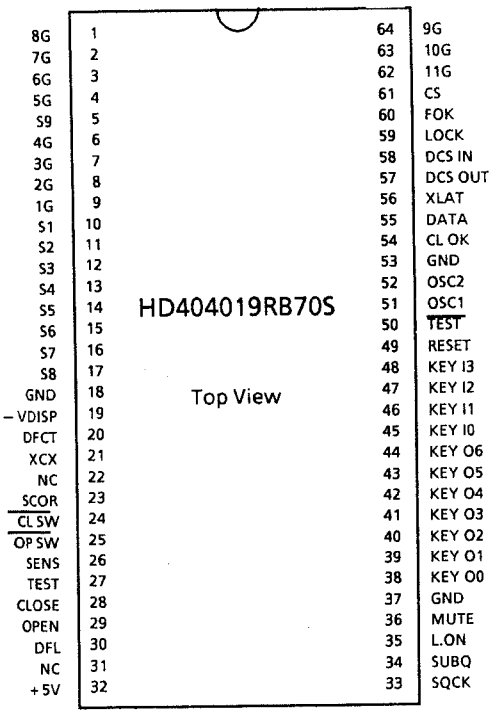
4.Pin Function Description

Pin No.	Symbol	I/O	Description	Pin No.	Symbol	I/O	Description
1	TEST	I	Test pin. Fixed at "L" level in normal operation mode.	10	LATCH	I	Latch clock input
2	8fs/4fs	I	To specify FIR 3. "H" : 8fs "L" : 4fs	11	SHIFT	I	Shift clock input
3	XOUT	O	Master clock output (f = 384fs)	12	ATT	I	Attenuator data input
4	XIN	I	Master clock input (f = 384fs)	13	BCKO	O	BCK output
5	VDD	--	Power supply(+ 5V)	14	VSS	--	Power supply (GND)
6	BCK	I	BCK input	15	DATAR	O	4fs mode: WCK output 8fs mode : RCH serial data output (2's complement)
7	DATA	I	Serial data input (2's complement)	16	DATAL	O	4fs mode:LCH and RCH time division serial data output(2's complement) 8fs mode : LCH serial data output (2's complement)
8	LRCK	I	LRCK input	17	LRCKO	O	LRCK output
9	INIT	I	Re-synchronized by rising edge of this signal	18	SLOT	I	To specify output slot. "H": 18-bit slot "L": 16-bit slot

TEST, 8fs / 4fs and SLOT pins : Pull down resistance

■ HD404019RB70S(IC201) : System controller

1.Terminal Layout



2.Key Matrix

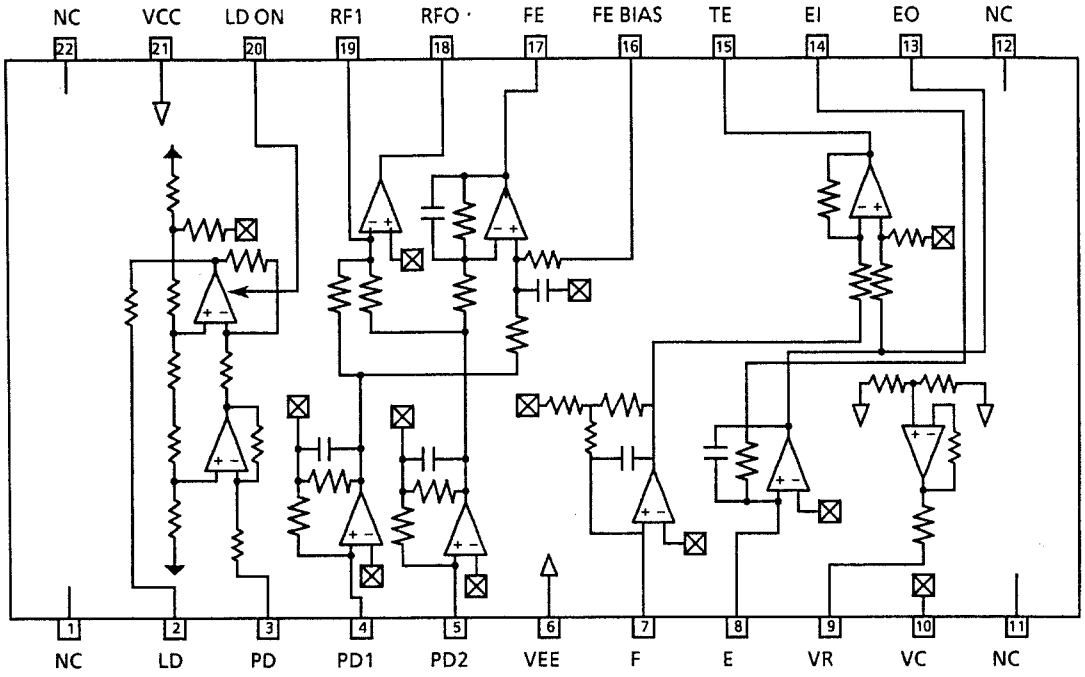
	KEY I 0 (PIN 45)	KEY I 1 (PIN 46)	KEY I 2 (PIN 47)	KEY I 3 (PIN 48)
KEY O0 (PIN 38)	◀◀	K1	K6	
KEY O1 (PIN 39)	▶▶	K2	K7	
KEY O2 (PIN 40)	⏮	K3	K8	▶II
KEY O3 (PIN 41)	⏭	K4	K9	K + 10
KEY O4 (PIN 42)	■	K5	K10	
KEY O5 (PIN 43)	DDRP	RANDOM	CANCEL	PROGRAM
KEY O6 (PIN 44)	EDIT	▲	REPEAT	SIDE A / B

3.Pin Description

Pin No.	Symbol	I/O	Description	Pin No.	Symbol	I/O	Description
1~4	8G~5G	O	FL grid control output	34	SUBQ	I	Peak level data input
5	S9	O	FL segment control output	35	L.ON	O	Laser on signal output
6~9	4G~1G	O	FL grid control output	36	MUTE	O	Mute signal output
10 ~17	S1~S8	O	FL segment control output	37	GND	--	Ground
18	GND	--	Ground	38 ~44	KEYO0 ~KEYO6	O	Key signal output
19	– VDISP	I	FL power supply	45 ~48	KEYI0 ~KEYI3	I	Key signal input
20	DFCT	O	Signal turns "H" during focus search	49	RESET	I	Reset signal input
21	XCX	O	Signal turns "H" when setting the tracking loop to "OFF"	50	TEST	I	Test mode input : connect yo + 5V
22	RMIN	I	Remote Control Signal Input Not use for XL-V151TN / V152BK	51	OSC 1	I	Clock oscillation input
23	scor	O	Signal turns "H" when detecting sub code syncro S0 or S1	52	OSC 2	O	Clock oscillation output
24	CLSW	I	Close switch : active "LOW"	53	GND	--	Ground
25	OPSW	I	Open switch : active "LOW"	54	CL OK	O	Clock signal output for serial data
26	SENS	I	Sens signal input	55	DATA	O	Serial data output to IC401
27	TEST	I	Test mode input	56	XLAT	O	Latch signal for serial data transfer to IC401
28	CLOSE	O	Close signal output	57	DCS OUT	O	Compu-link signal output
29	OPEN	O	Open signal output	58	DCS IN	I	Compu-link signal input
30	DFL	O	Digital filter latch signal output	59	LOCK	I	Lock signal input
31	NC	--	Non connection	60	F OK	I	Focus OK signal input
32	5V	--	Power supply	61	CS	--	Chip select : connect to ground
33	SQCK	O	Clock output for SUBQ	62 ~64	11G~9G	O	FL grid control output

■ CXA1571S(IC501) : RF AMP

1. Block Diagram



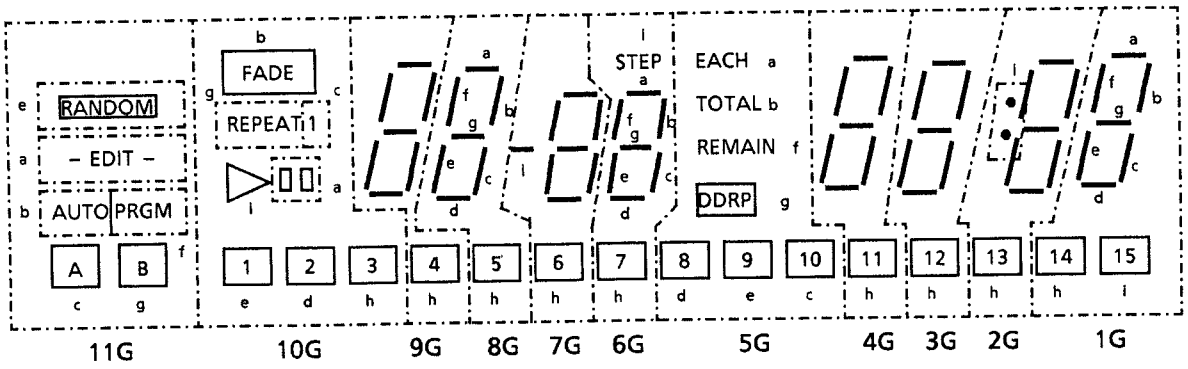
2. Pin Description

Pin No.	Symbol	I/O	Description
2	LD	O	APC(Automatic Power Control) amp output pin.
3	PD	I	APC amp input pin.
4 5	PD1 PD2	I I	RF I-V amp inverted input pins; they are connected to the A + C and B + D pins of the photodiode and receive current input.
7 8	F-IN E-IN	I I	F and E I-V amp inverted input pin; they are connected to Photodiodes F and E and receive current input.
9	VR	O	(VCC + VEE) / 2 DC voltage output pin.
10	VC	I	VC intermediate voltage input pin; when dual ± 5V power supplies are used, this pin is connected to GND; for a single + 5V power supply, it is connected to the VR pin.
13	EO	O	Monitor output pin for I-V amp E.
14	EI	I	Gain adjustment pin for I-V amp E.
15	TE	O	Tracking error amp. output pin.
16	FE-BIAS	I	Bias adjustment pin for the mon-inverted side of the focus error amp.
17	FE	O	Focus error amp. output pin.
18	RF O	O	RF amp output pin.
19	RF I	I	RF inverted side input pin; the resister connected between this pin and the RFO pin determines the gain of theRF amp.
20	LD-ON	I	This pin switches the APC amp on / off: on for VCC, off for ground.

Internal Connections of FL Display Tube

■ ELU0001-114 (FL201)

1. Grid Layout



2. Pin Connection

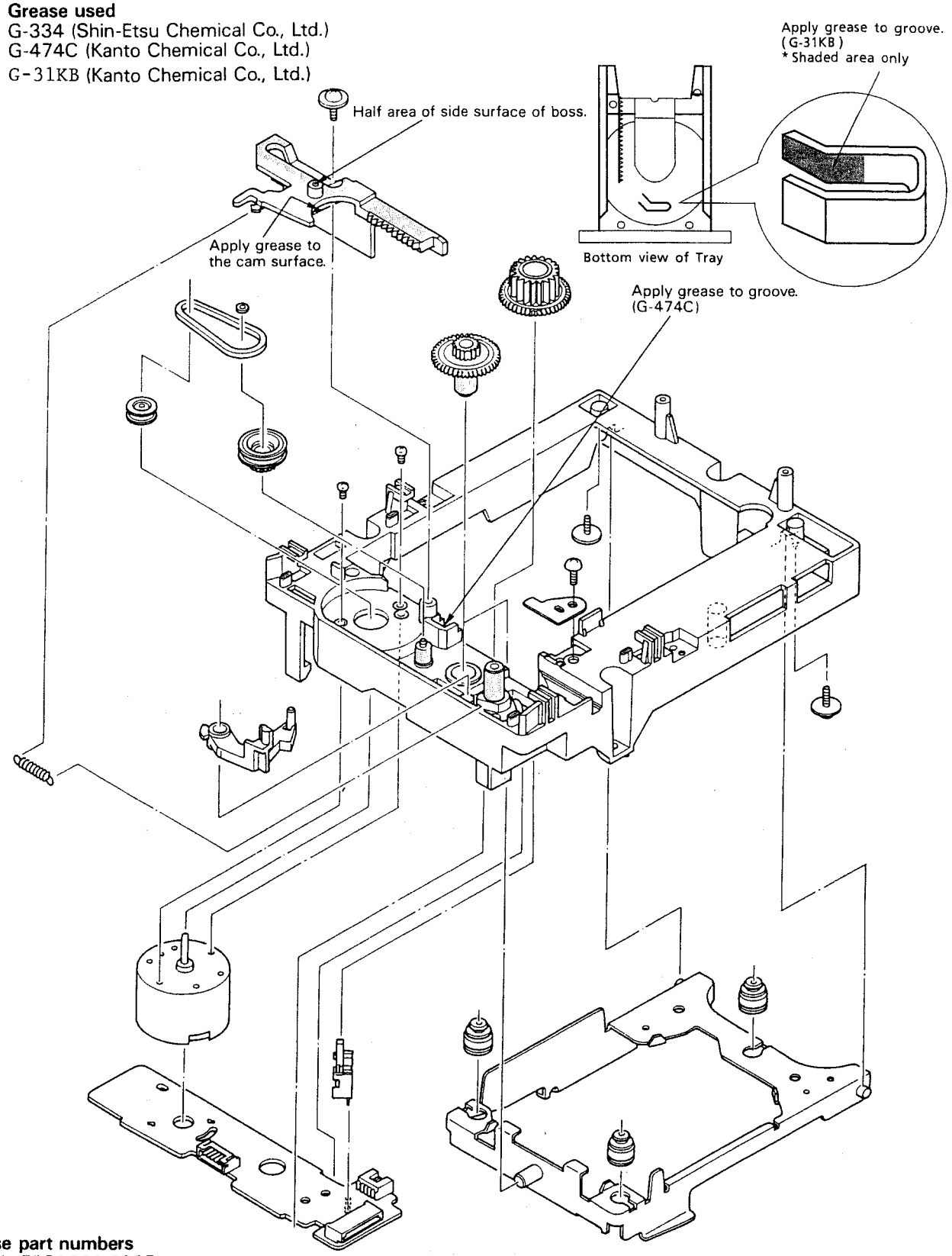
Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Electrode	F1	F1	NP	NC	11G	10G	9G	8G	7G	6G	5G	P (i)	4G	3G	2G	1G	P (a)	P (b)	P (f)

Pin No.	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
Electrode	P (g)	P (c)	P (e)	P (d)	P (h)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NP	F2	F2

Note ···· F : Filament, G : Grid, a~i : Element, NP : No pin, NC : No connection

Application Points for Grease

Grease used
- G-334 (Shin-Etsu Chemical Co., Ltd.)
- G-474C (Kanto Chemical Co., Ltd.)
- G-31KB (Kanto Chemical Co., Ltd.)


Half area of side surface of boss.
Apply grease to the cam surface.
Bottom view of Tray
Apply grease to groove. (G-31KB) * Shaded area only
Apply grease to groove. (G-474C)

Grease part numbers
G-334: EBS0006-009B
G-474C: EBS0006-019B
G-31KB: EBS0006-013B

Disassembly Procedures

1. Removing the metal cover

1) Remove the 4 screws holding the both sides of the metal cover, and the 2 screws holding the rear side of it.
2) Gently spread both sides of the metal cover to the outside, lift up the rear section, and remove the metal cover.

2.Removing the tray assembly

1) Remove the metal cover.
2) Turn on the power. Press the OPEN / CLOSE switch to move the tray out and the power off .
3) Remove the screw Ⓐ on the tray.
4) Pull the tray toward the front to move it.

Note: If the power can not be turned on due to a malfunction , etc., insert a Philips screwdriver through the hole on the bottom and turn it clockwise to move the tray out .

3.removing the mechanism assembly

1) Remove the metal cover.
2) Remove the tray assembly.
3) Remove the 2 screws Ⓑ holding the clamp assembly, then remove the clamp assembly.
4) Remove the 3 screws Ⓒ holding the mechanism assembly.

4.Removing the rear panel

1) Remove the 6 screws Ⓓ holding the rear panel.(8 screws Ⓓ, Ⓔ for with AC selector)
2) Remove the rear panel.

5.Removing the main P.C. Board

(FSN-001-1 for XL-V151TN/152BK,FSN-002-1 for XL-V251TN/252BK)

1) Remove the metal cover.
2) Remove the rear panel.
3) Remove the 4 screws Ⓕ holding the P.C.board and 2 screws Ⓖ holding the transformer.
4) Remove the connectors connecting with the main P.C.board.

6.Removing the front panel assembly

1) Remove the metal cover.
2) Remove the tray assembly.
3) Remove the screw Ⓗ on the bottom of the front panel.
4) Remove the connector.
5) Remove the screw Ⓘ holding the bracket.
6) Release the hooks Ⓙ holding the front panel and remove the front panel assembly.

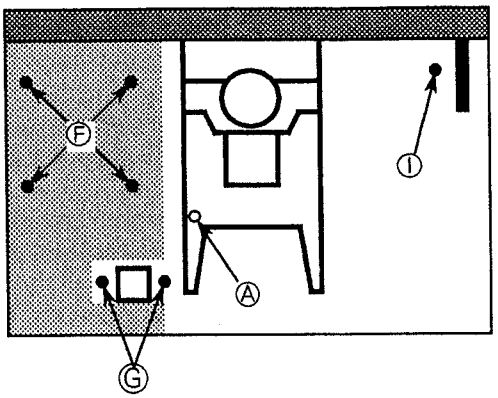


Figure 1

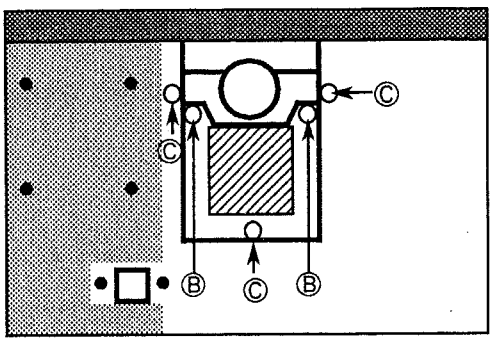


Figure 2

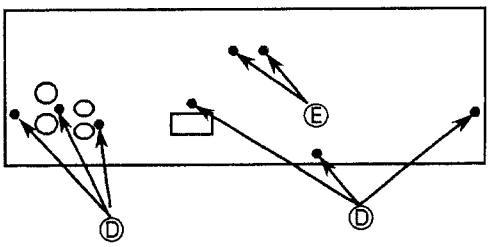


Figure 3

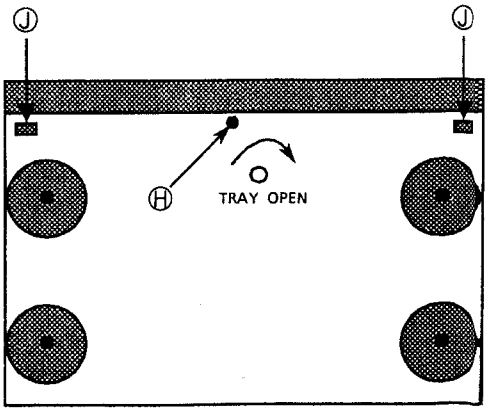


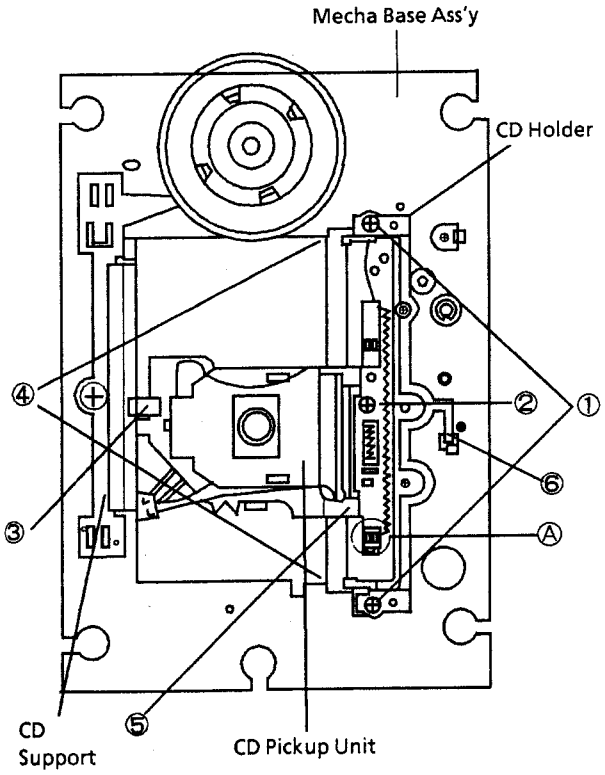
Figure 4

7. Removing the Laser Pickup

1) Remove the metal cover, tray assembly and the clamp.
2) Move the Pickup Unit from the rest position to the center pushing point ⑤with finger.
3) Remove the screw ② from the CD RACK assembly, and remove the CD RACK assembly.
4) Remove the screw ① from the Mecha Base assembly.
5) Remove the CD HOLDER fastening the shaft from the Mecha Base assembly.(Release the hook ⑥)
6) Remove the CD Pick Unit with the shaft.

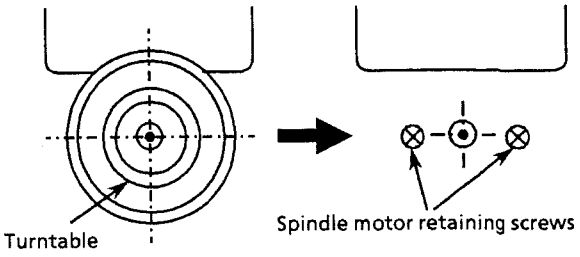
8. Installing the Laser Pickup

1) Connect the 2 wires with the connectors of APC (Automatic Power Control) P.C.Board.
2) While installing the ③ in the CD Support, set the shaft on the base hook④.
3) Install the CD Holder.
4) Install the CD Rack assembly in CD Pickup Unit.
   (1) Fit end Ⓐ
   (2) Fix screw ②.



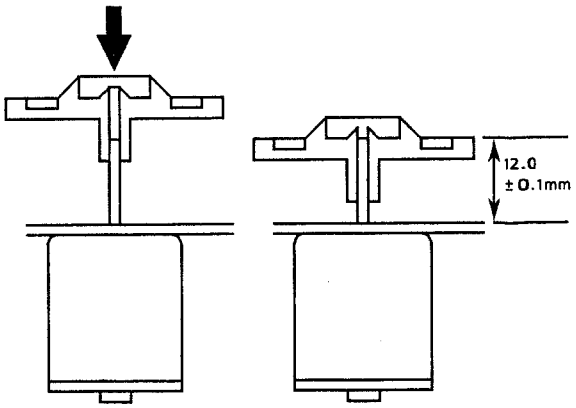
9. Removing the spindle motor

1) Remove the Mechanism assembly.
2) Remove the turntable, and remove the two screws retaining the spindle motor.
3) Remove the screw retaining the spindle and the Feed Motor P.C. Board and unsolder it.

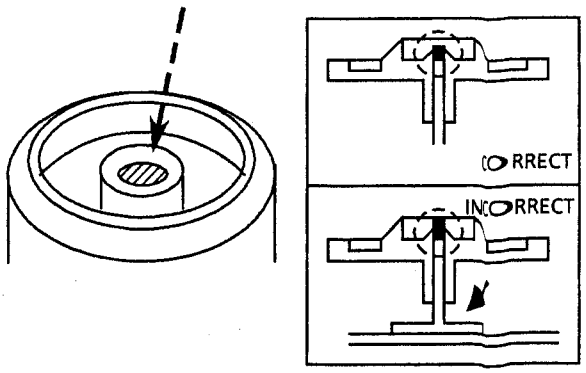


10. Installing the spindle motor

1) Tighten the 2 screws to the same torque.
2) Fasten the Spindle and the Feed Motor P.C. Board with the screw and solder.
3) Install the turntable.When installing, press straight down at the center of the turntable until the distance from the surface of the mechanism base to the top of the turntable is exactly 12.0 ± 0.1mm.

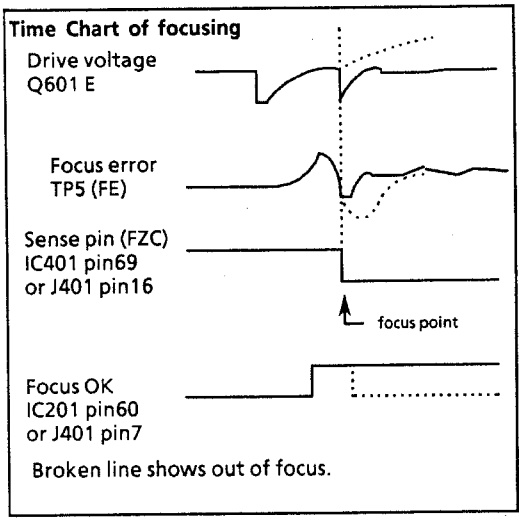


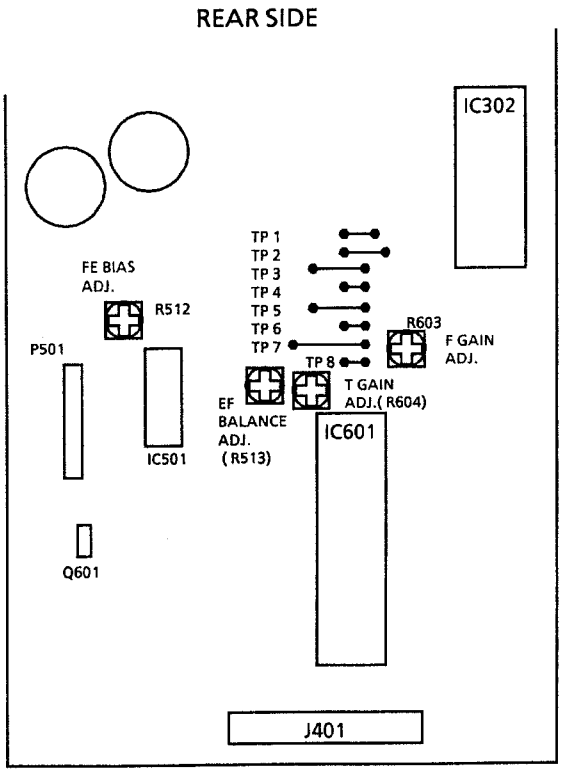
4) After insertion is complete, bond the motor shaft and turntable together (at the section marked by an arrow in the figure on the left below).

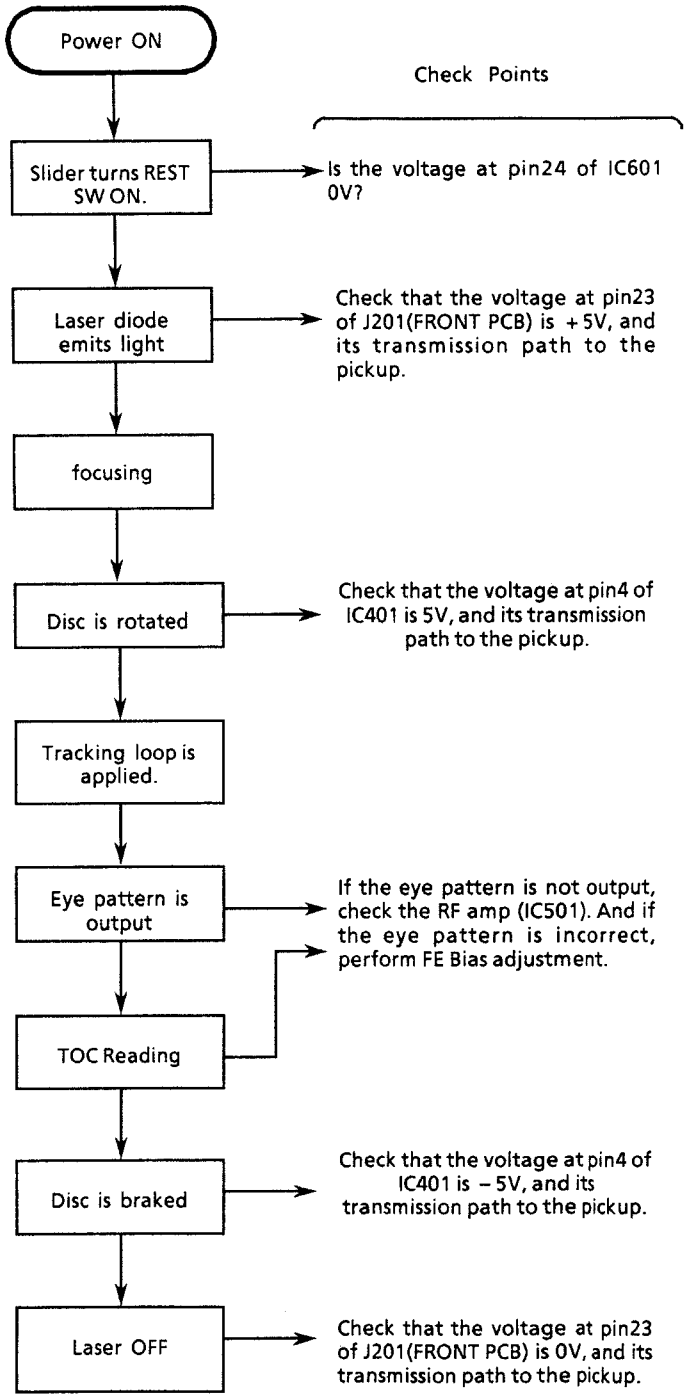


5) Use "LOCKTITE" #460 bonding agent, and apply as little as possible. Take care not to allow any excess bonding agent to get onto the turntable. Be extremely careful not to allow bonding agent to adhere to the motor bearings (the section marked by an allow in the figure on the right).

Flow of Functional Operation Until TOC is Read






Power ON
Check Points
Slider turns REST SW ON.
Is the voltage at pin24 of IC601 0V?
Laser diode emits light
Check that the voltage at pin23 of J201(FRONT PCB) is +5V, and its transmission path to the pickup.
focusing
Disc is rotated
Check that the voltage at pin4 of IC401 is 5V, and its transmission path to the pickup.
Tracking loop is applied.
Eye pattern is output
If the eye pattern is not output, check the RF amp (IC501). And if the eye pattern is incorrect, perform FE Bias adjustment.
TOC Reading
Disc is braked
Check that the voltage at pin4 of IC401 is −5V, and its transmission path to the pickup.
Laser OFF
Check that the voltage at pin23 of J201(FRONT PCB) is 0V, and its transmission path to the pickup.

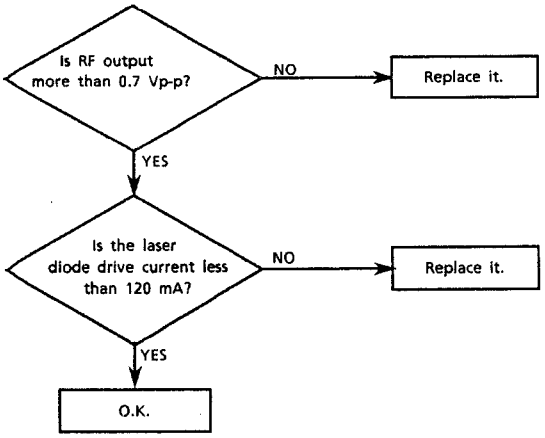
Maintenance of Laser Pickup

1. Life of the laser diode

When the life of the laser diode has expired, the following symptoms will appear.

1) The level of RF output (EFM output: amplitude of eye pattern) will be low.
2) The drive current required by the laser diode will be increased.

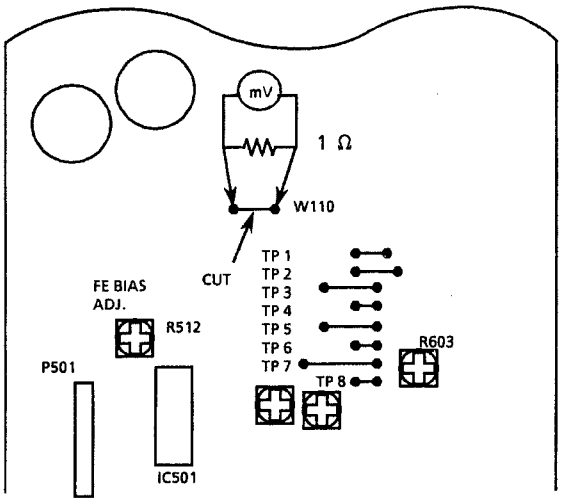
In such a case, check the life of the laser diode following the flowchart below.



2. Measurement of laser diode drive current

Replace the jump wire (W110) shown below with the resistor (1Ω).

Measure the voltage across the resistor with a milli-voltmeter. When the voltage is more than 120mV, it shows that the life of the laser diode has expired



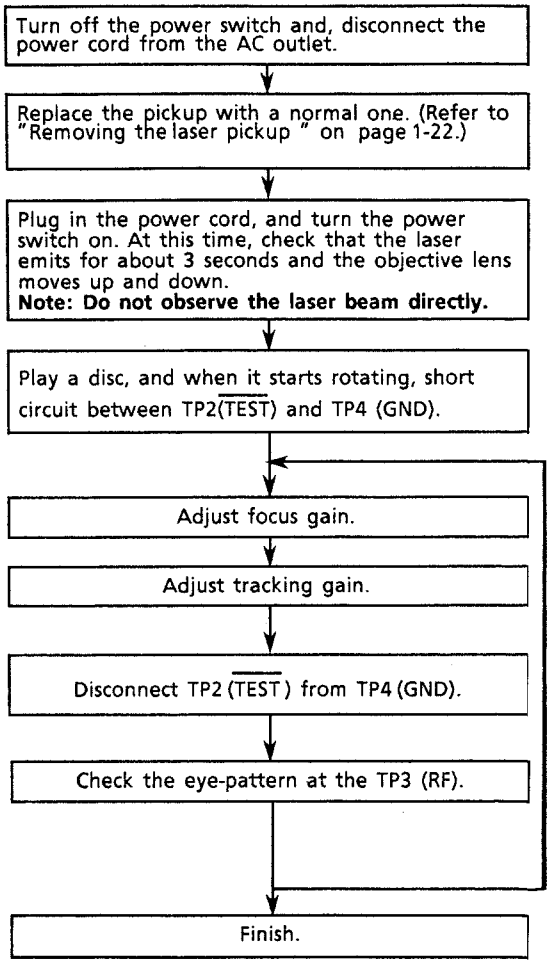
3. Semi-fixed resistor on the APC PC board

The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power. Since this adjustment should be performed to match the characteristics of the whole optical block, **do not touch the semi-fixed resistor.**

If the laser power is lower than the specified value, the laser diode is almost worn out, and the laser pickup should be replaced.

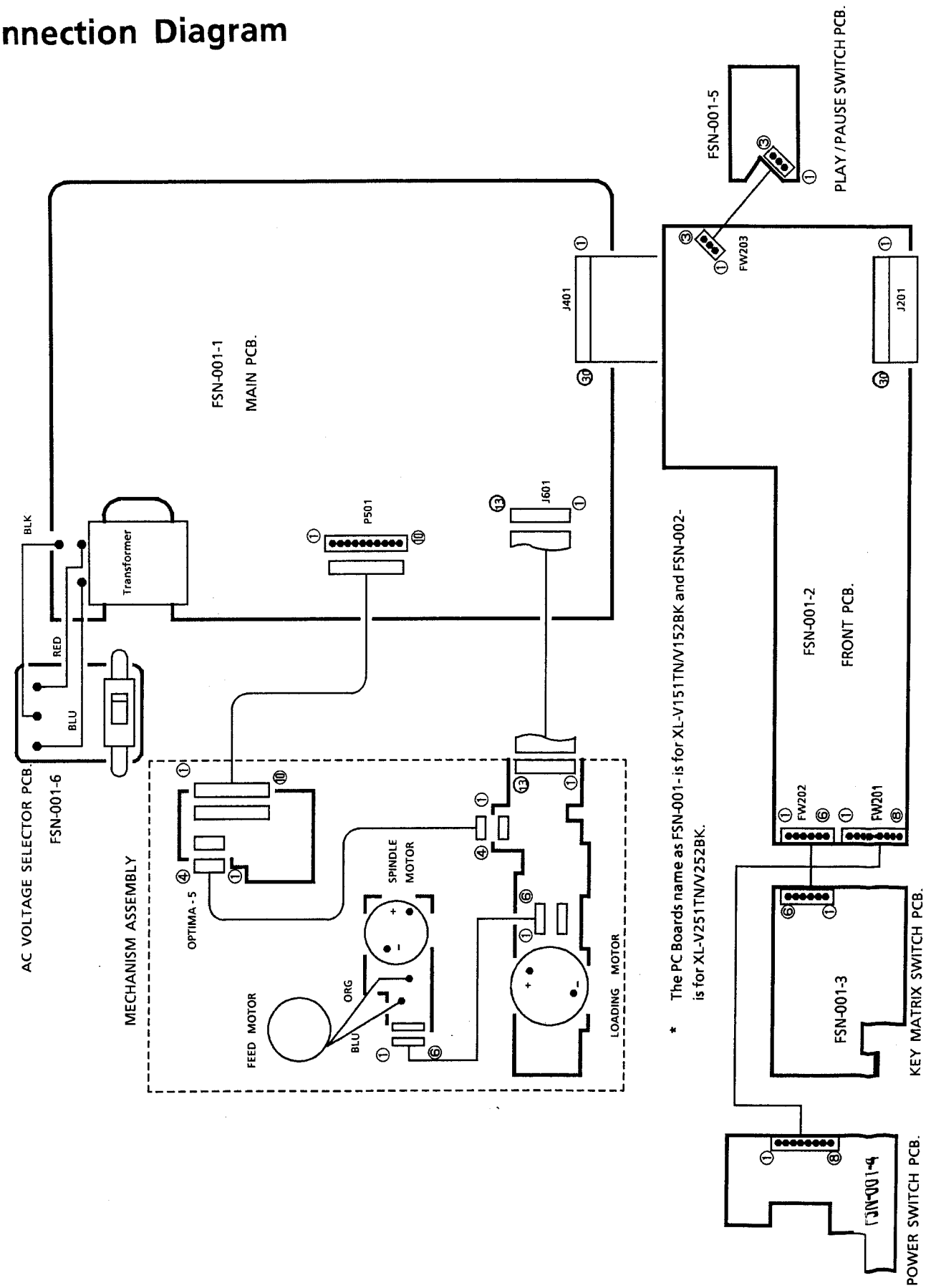
If the semi-fixed resistor is adjusted while the pickup is functioning normally, the laser pickup may be damaged due to excessive current.

Replacement of Laser Pickup

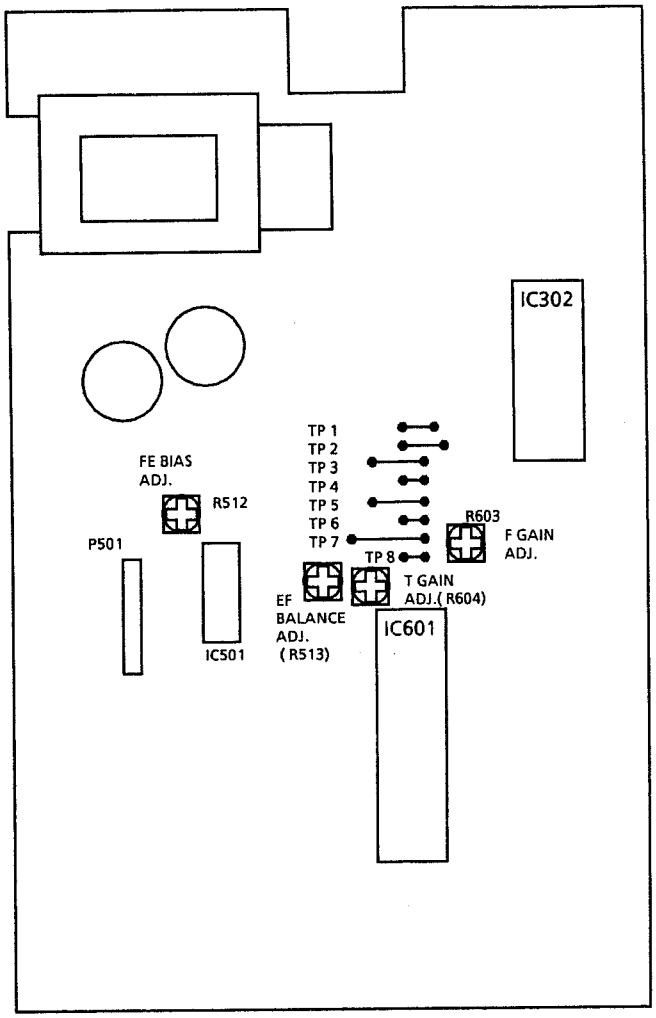

Turn off the power switch and, disconnect the power cord from the AC outlet.
Replace the pickup with a normal one. (Refer to "Removing the laser pickup " on page 1-22.)
Plug in the power cord, and turn the power switch on. At this time, check that the laser emits for about 3 seconds and the objective lens moves up and down.
Note: Do not observe the laser beam directly.
Play a disc, and when it starts rotating, short circuit between TP2(TEST) and TP4 (GND).
Adjust focus gain.
Adjust tracking gain.
Disconnect TP2 (TEST) from TP4 (GND).
Check the eye-pattern at the TP3 (RF).
Finish.

Note: Since one adjustment may affect other settings, repeat these adjustments a few times.

Connection Diagram



Adjustment Procedures



■ FE Bias

1. Connect an oscilloscope to TP 5(FE) and TP 4(GND).
2. Adjust R512(FE bias) so that the DC voltage at TP 5 becomes 0 ± 10mV.

■ EF balance

1. Connect an oscilloscope to TP 7(TE) and TP 4(GND).
2. Load a disc and press the play button.
3. Short-circuit between TP 2(TEST) and TP 4(GND).
4. Adjust R513(EF balance) so that the center of the waveform at TP 7(TE) bocomes 0V.

■ Gain adjustment

If the gain is out of adjustment, the symptoms below will appear.

●Gain too low

Focus gain	:	Focus is not obtained and disc does not rotate.
Tracking gain	:	Mechanical shock occurs easily and sound is interrupted. Or time counter display stop counting.

●Gain too high

Focus gain	:	Scratches (on the disc) easily interrupt play, and noise is increased during play.
Tracking gain	:	Since the follow-up ability of the pickup is too high, the pickup may oscillate and oscillating sound may output.

As described above, the focus and tracking gain adjustment are performed so as to satisfy mutually contradictory characteristics.
A simplified adjustment procedure is described below. However, since exact adjustment can not be performed prior to adjustments, note(or mark) the positions of the semi-fixed VRs.
If the positions after the simplified adjustment are only different, return the VRs to their original position.

Focus gain adjustment

1. Connect an oscilloscope to TP 5(FE) and TP 4(GND).
2. Load a disc and press the PLAY button.
3. Adjust R603(F.GAIN ADJ.) so that the waveform becomes below figure 1.

Tracking gain adjustment

1. Connect an oscilloscope to TP 7(TE) and TP 4(GND).
2. Load a disc and press the PLAY button.
3. Adjust R604(T.GAIN ADJ.) so that the waveform becomes below figure 2.

Focus Gain Adjustment

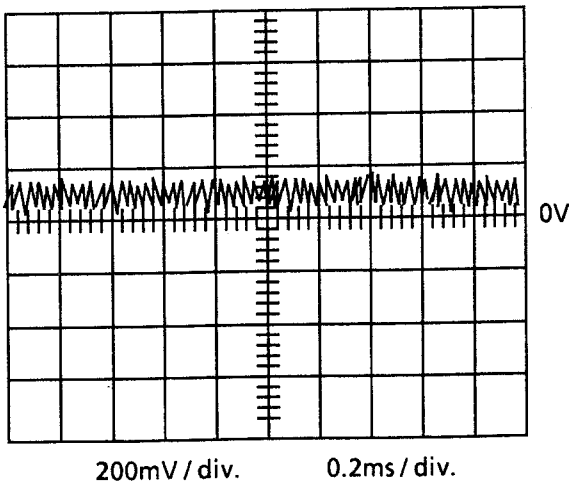


Figure - 1

Tracking Gain Adjustment

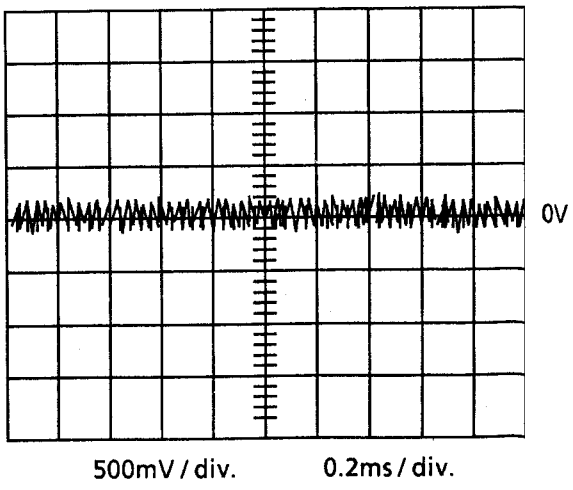
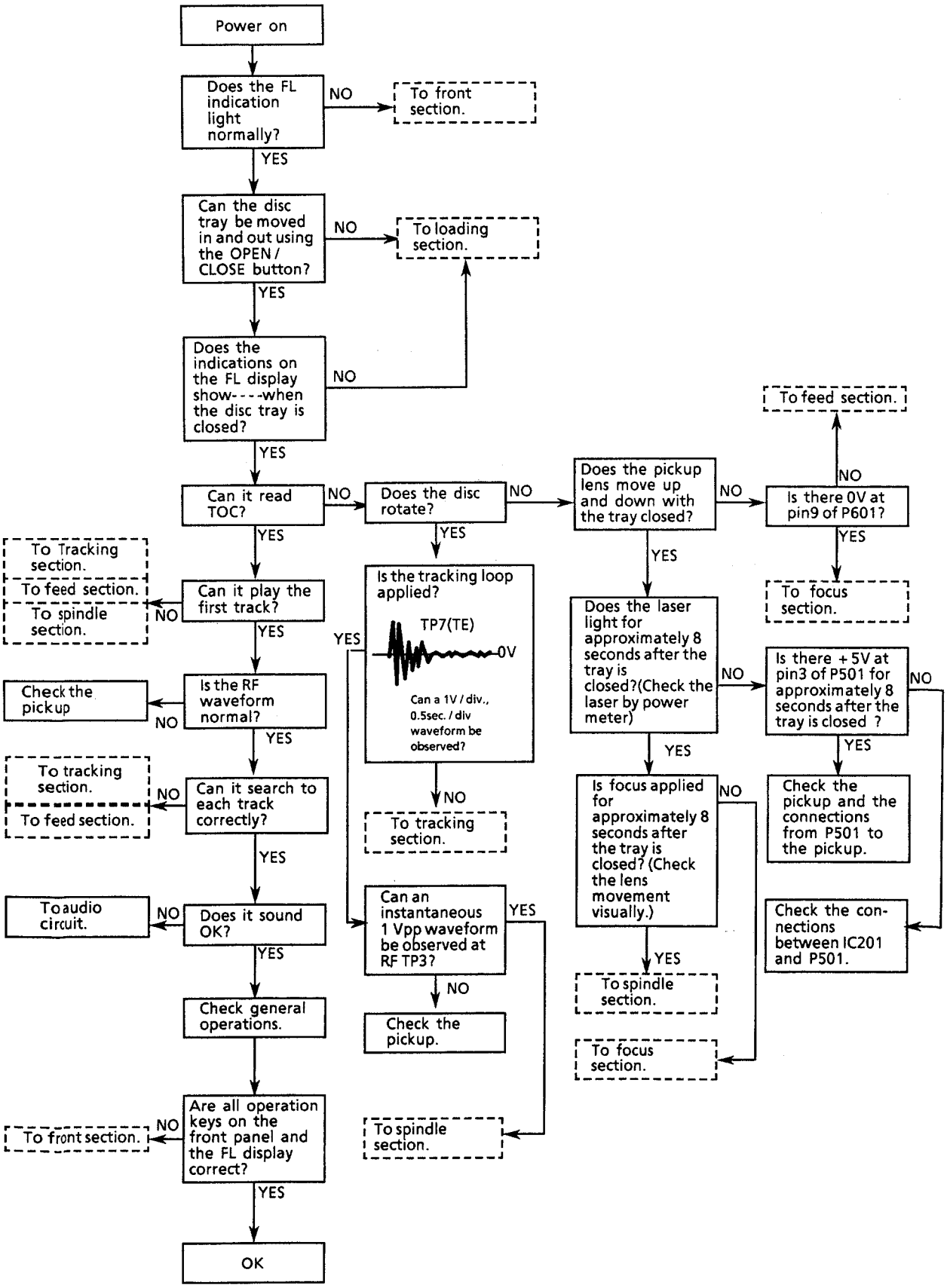


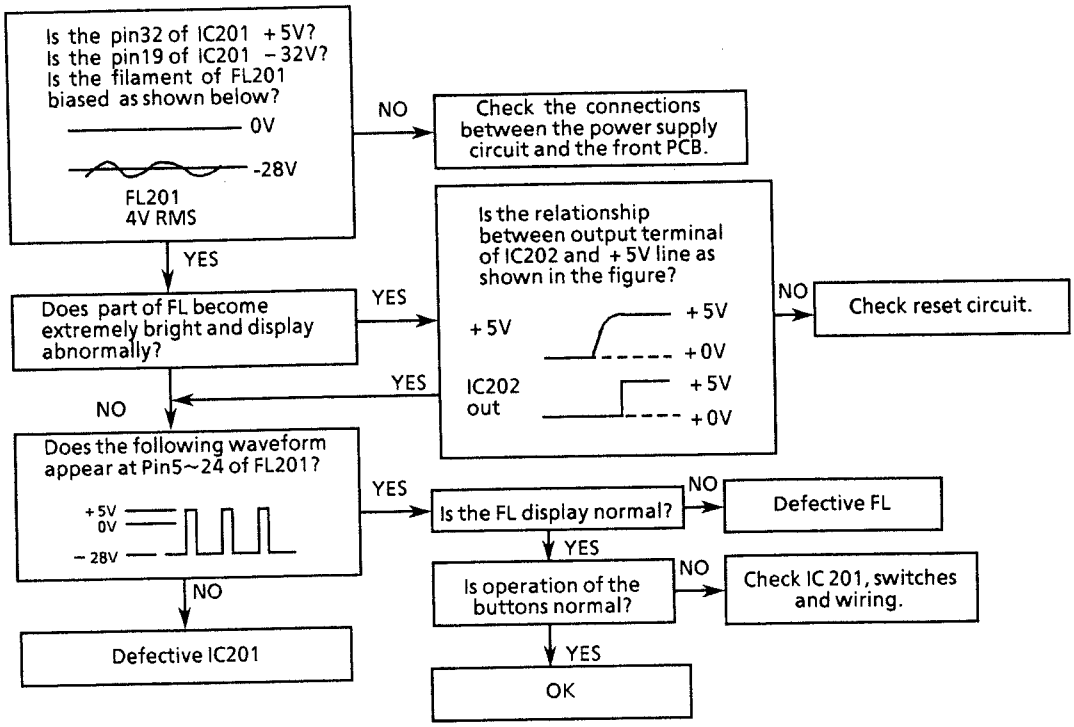
Figure - 2

Troubleshooting

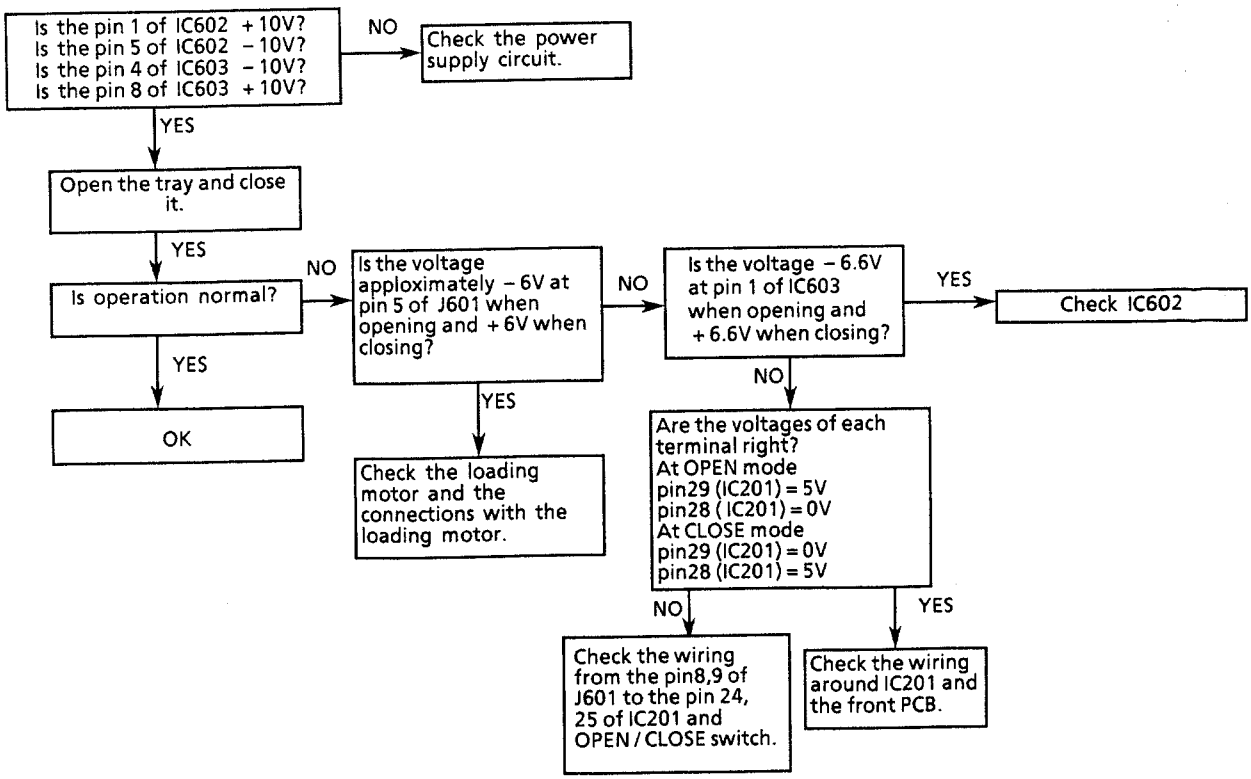
The following shows the status of the various circuits from turning on the power to the start of disc play .



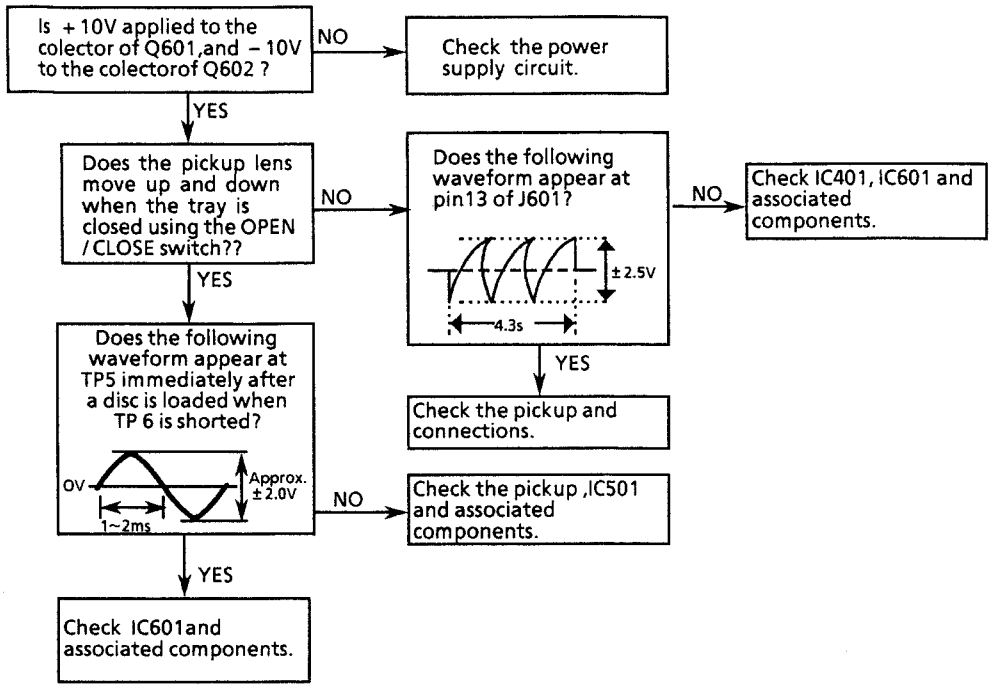
Front Section



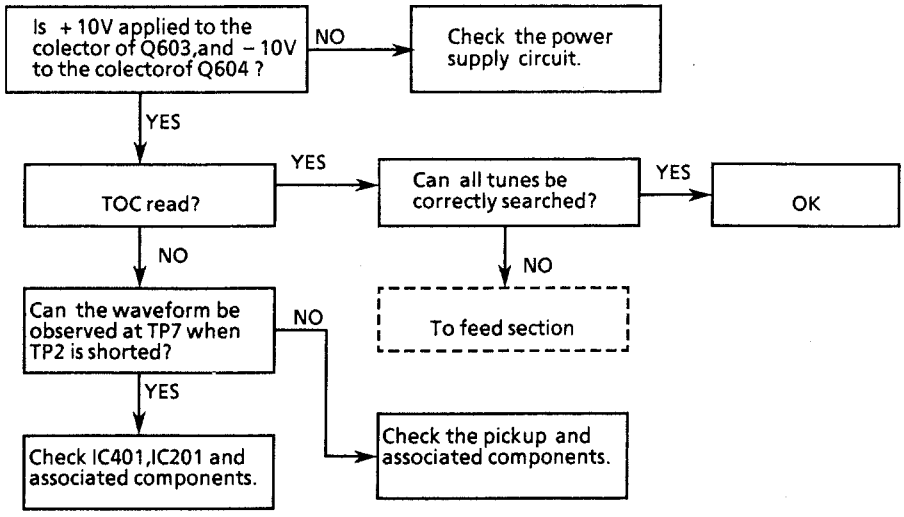
Loading section


Is the pin 1 of IC602 +10V?
Is the pin 5 of IC602 −10V?
Is the pin 4 of IC603 −10V?
Is the pin 8 of IC603 +10V?
NO
Check the power supply circuit.
YES
Open the tray and close it.
YES
Is operation normal?
NO
Is the voltage approximately −6V at pin 5 of J601 when opening and +6V when closing?
NO
Is the voltage −6.6V at pin 1 of IC603 when opening and +6.6V when closing?
YES
Check IC602
YES
OK
YES
Check the loading motor and the connections with the loading motor.
NO
Are the voltages of each terminal right?
At OPEN mode
pin29 (IC201) = 5V
pin28 (IC201) = 0V
At CLOSE mode
pin29 (IC201) = 0V
pin28 (IC201) = 5V
NO
Check the wiring from the pin8,9 of J601 to the pin 24, 25 of IC201 and OPEN / CLOSE switch.
YES
Check the wiring around IC201 and the front PCB.

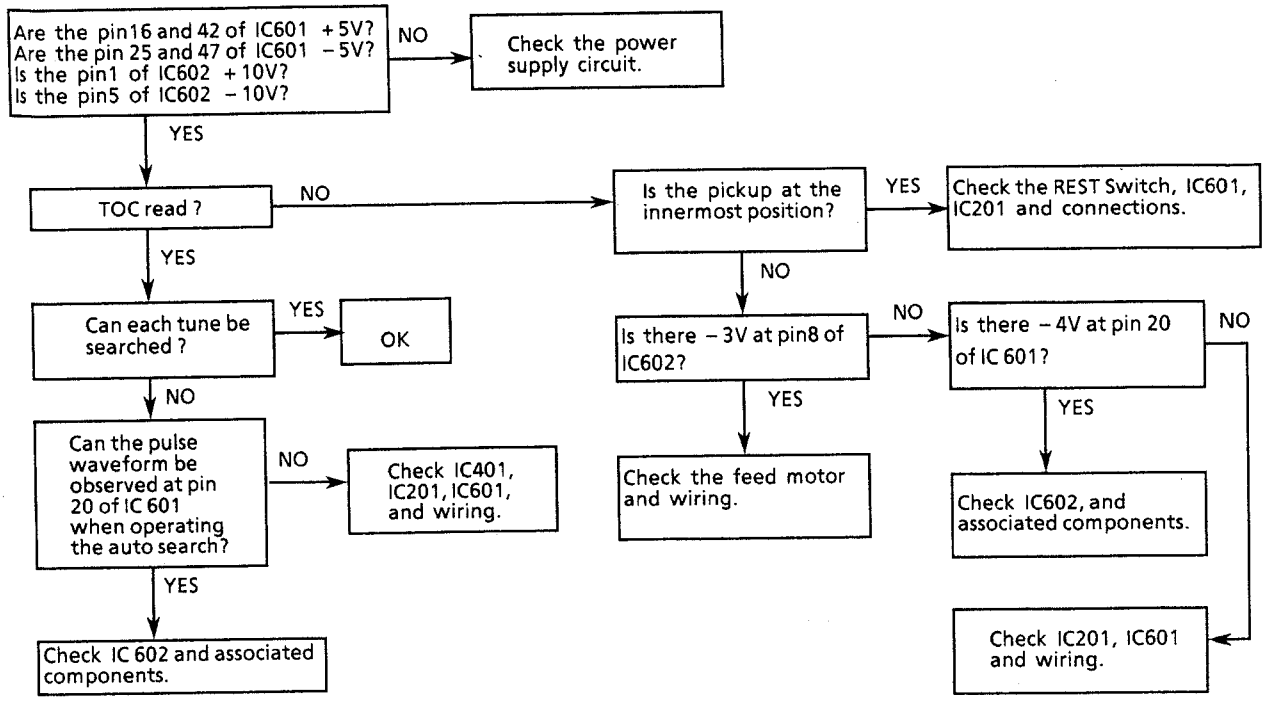
Focus section


Is +10V applied to the colector of Q601,and −10V to the colectorof Q602 ?
NO
Check the power supply circuit.
YES
Does the pickup lens move up and down when the tray is closed using the OPEN / CLOSE switch??
NO
Does the following waveform appear at pin13 of J601?
NO
Check IC401, IC601 and associated components.
±2.5V
4.3s
YES
Check the pickup and connections.
YES
Does the following waveform appear at TP5 immediately after a disc is loaded when TP 6 is shorted?
0V
Approx. ±2.0V
1~2ms
NO
Check the pickup ,IC501 and associated components.
YES
Check IC601and associated components.

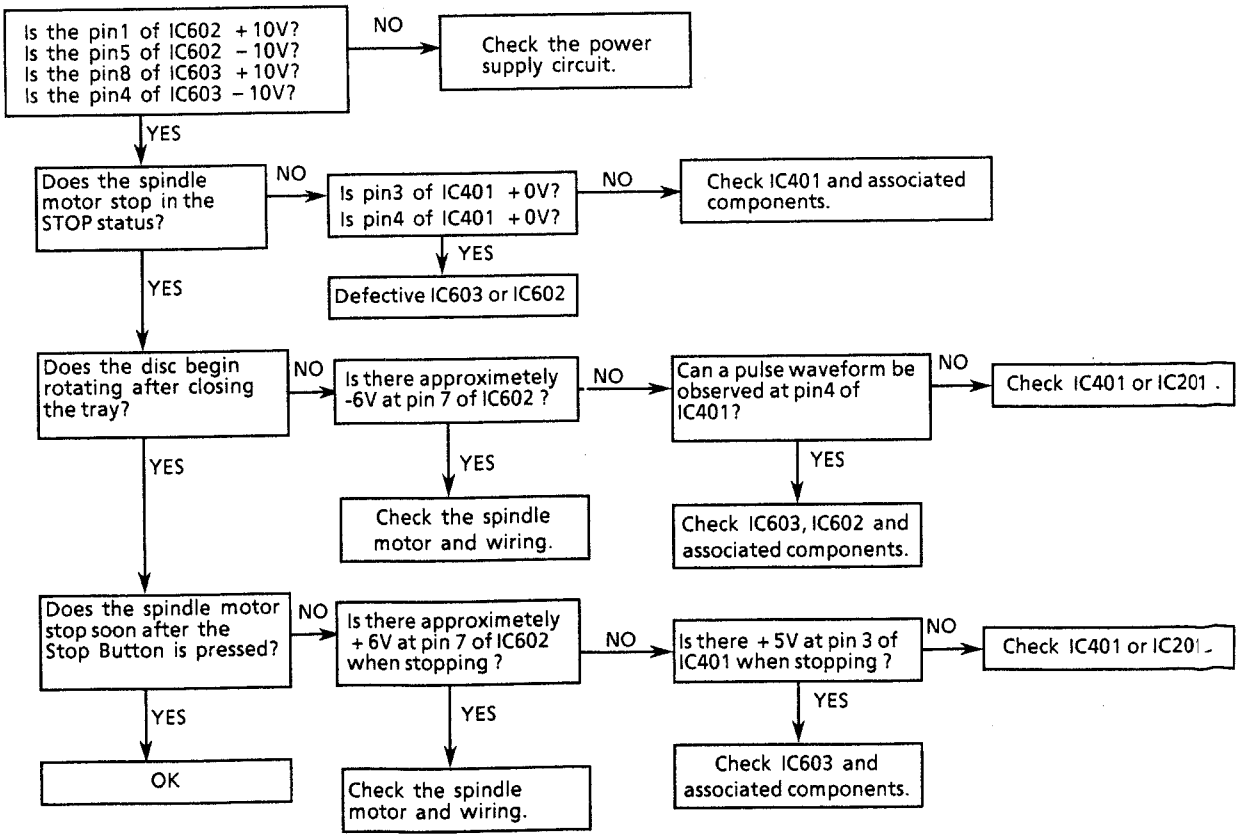
Tracking section



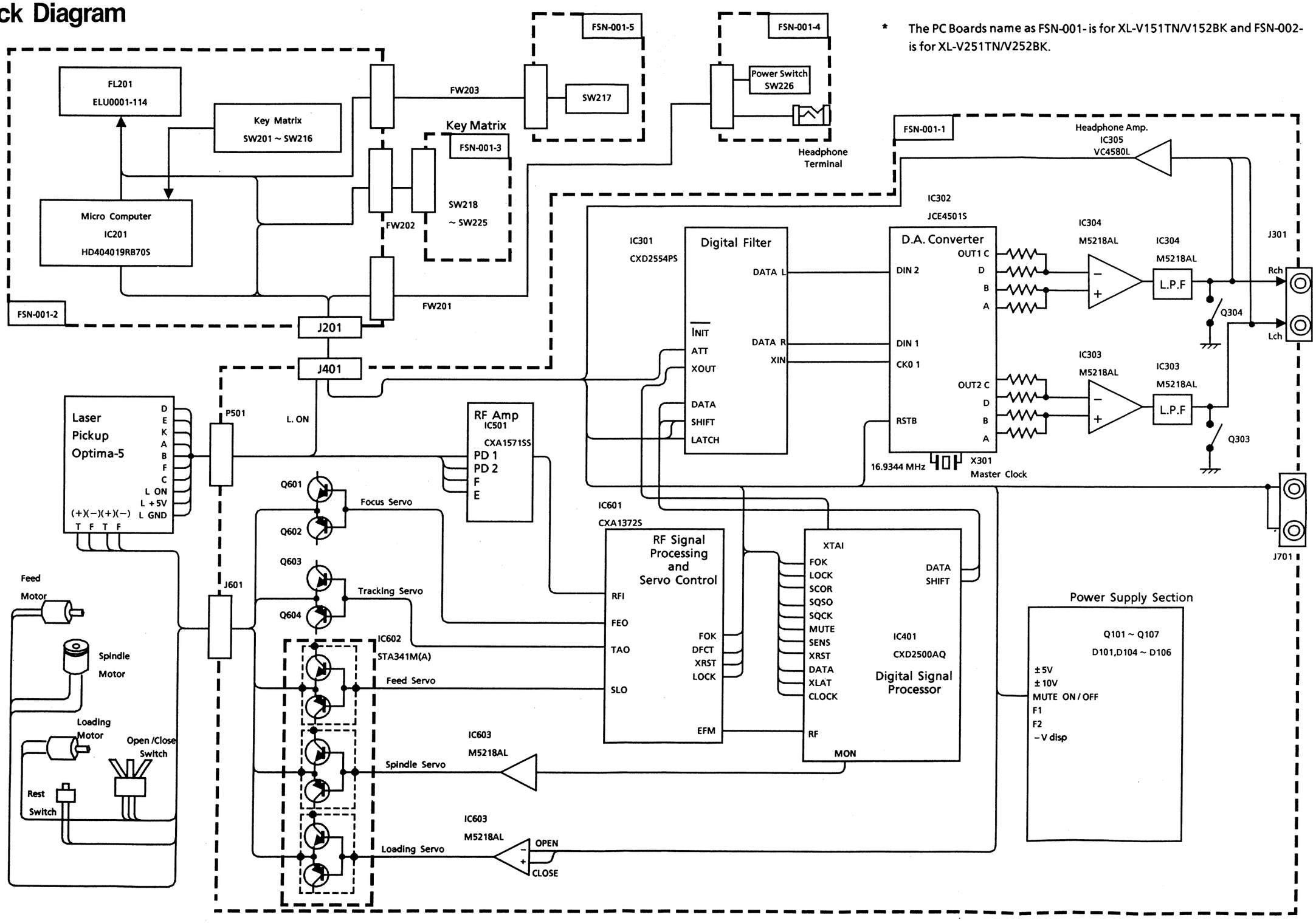
Feed section


Are the pin16 and 42 of IC601 +5V?
Are the pin 25 and 47 of IC601 −5V?
Is the pin1 of IC602 +10V?
Is the pin5 of IC602 −10V?
NO
Check the power supply circuit.
YES
TOC read ?
NO
Is the pickup at the innermost position?
YES
Check the REST Switch, IC601, IC201 and connections.
YES
Can each tune be searched ?
YES
OK
NO
Is there −3V at pin8 of IC602?
NO
Is there −4V at pin 20 of IC 601?
NO
YES
YES
Can the pulse waveform be observed at pin 20 of IC 601 when operating the auto search?
NO
Check IC401, IC201, IC601, and wiring.
Check the feed motor and wiring.
Check IC602, and associated components.
YES
Check IC 602 and associated components.
Check IC201, IC601 and wiring.

Spindle section


Is the pin1 of IC602 +10V?
Is the pin5 of IC602 −10V?
Is the pin8 of IC603 +10V?
Is the pin4 of IC603 −10V?
NO
Check the power supply circuit.
YES
Does the spindle motor stop in the STOP status?
NO
Is pin3 of IC401 +0V?
Is pin4 of IC401 +0V?
NO
Check IC401 and associated components.
YES
Defective IC603 or IC602
YES
Does the disc begin rotating after closing the tray?
NO
Is there approximetely -6V at pin 7 of IC602 ?
NO
Can a pulse waveform be observed at pin4 of IC401?
NO
Check IC401 or IC201 .
YES
YES
YES
Check the spindle motor and wiring.
Check IC603, IC602 and associated components.
Does the spindle motor stop soon after the Stop Button is pressed?
NO
Is there approximetely +6V at pin 7 of IC602 when stopping ?
NO
Is there +5V at pin 3 of IC401 when stopping ?
NO
Check IC401 or IC201 .
YES
YES
YES
OK
Check the spindle motor and wiring.
Check IC603 and associated components.

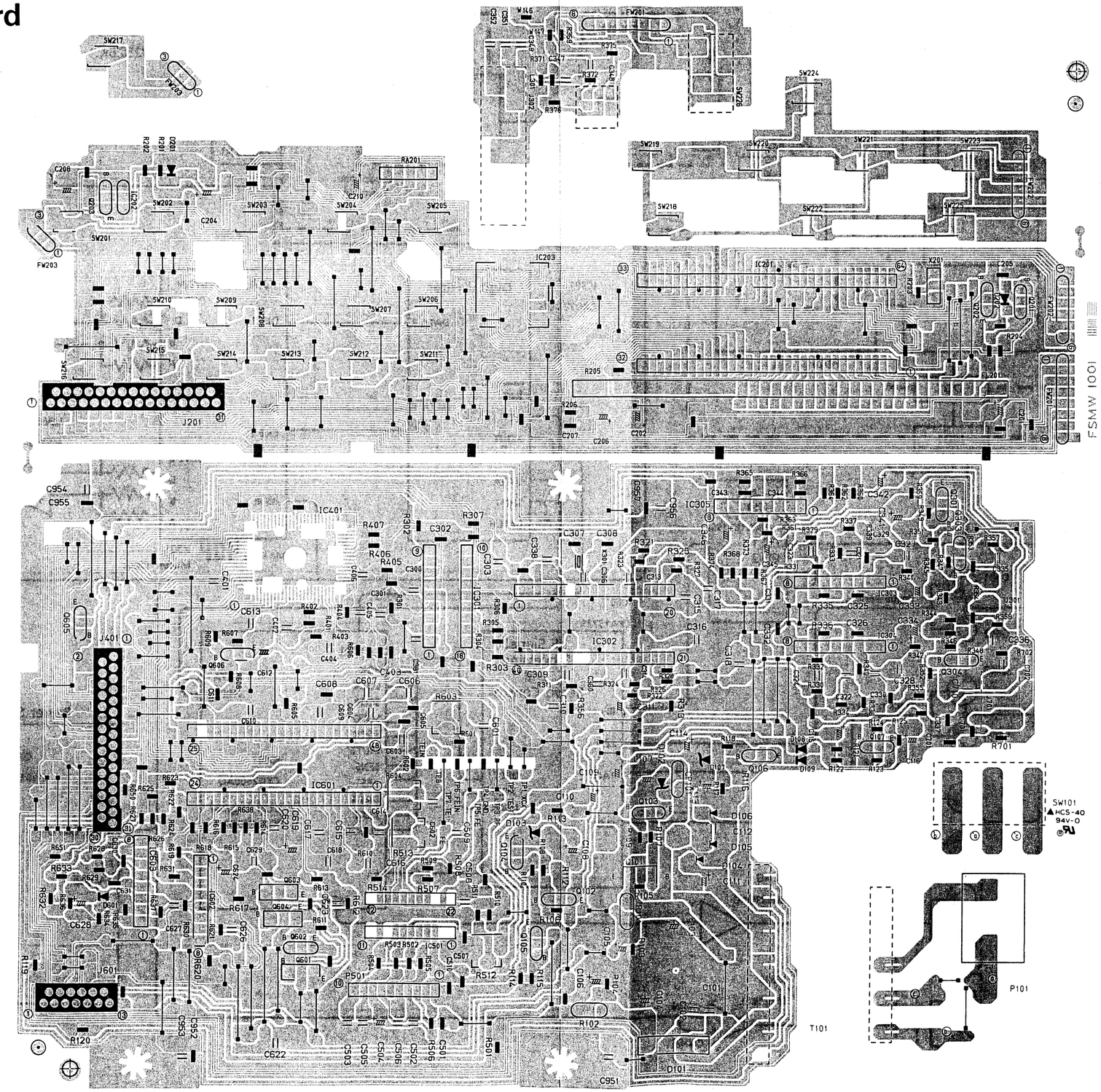
Block Diagram



* The PC Boards name as FSN-001- is for XL-V151TN/V152BK and FSN-002- is for XL-V251TN/V252BK.

XL-V151TN/XL-V152BK
XL-V251TN/XL-V252BK

Printed Circuit Board

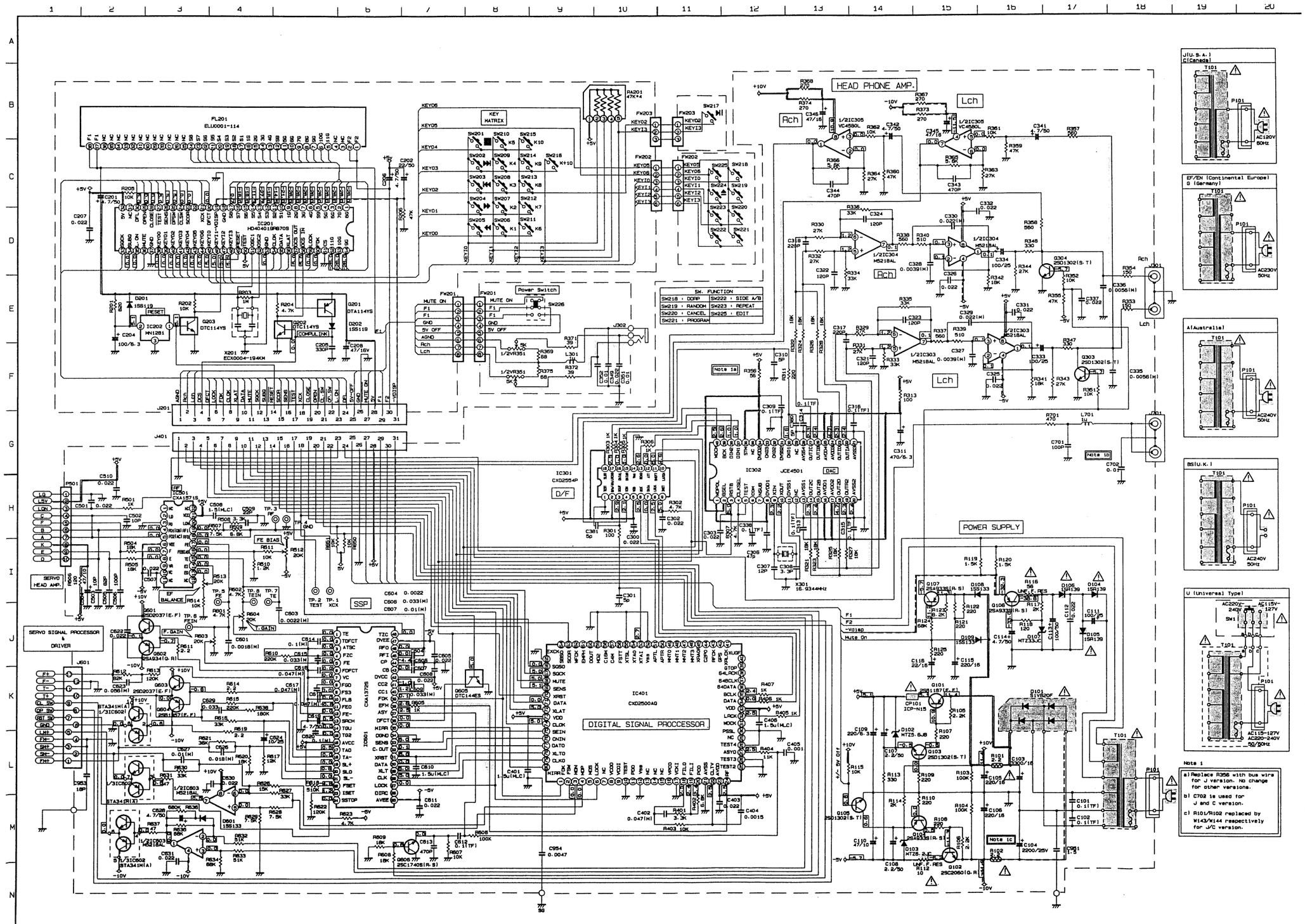


(No. 20301) (No. 20301)

MC-Service

Schematic Diagram

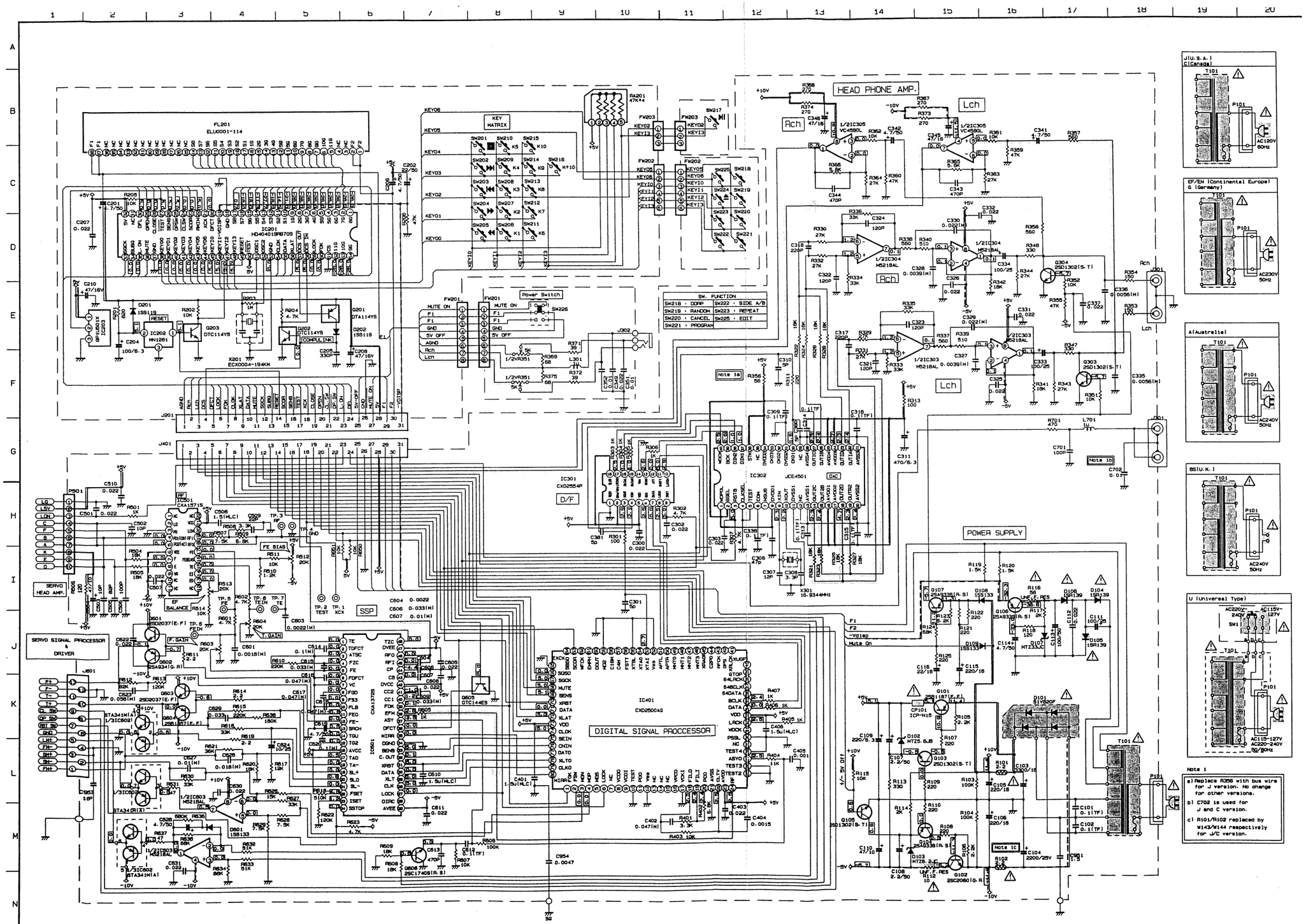
XL-V151TN/XL-V152BK



MC-Service

(No.20301)

XL-V251TN/XL-V252BK



(No. 20301) (No. 20301)

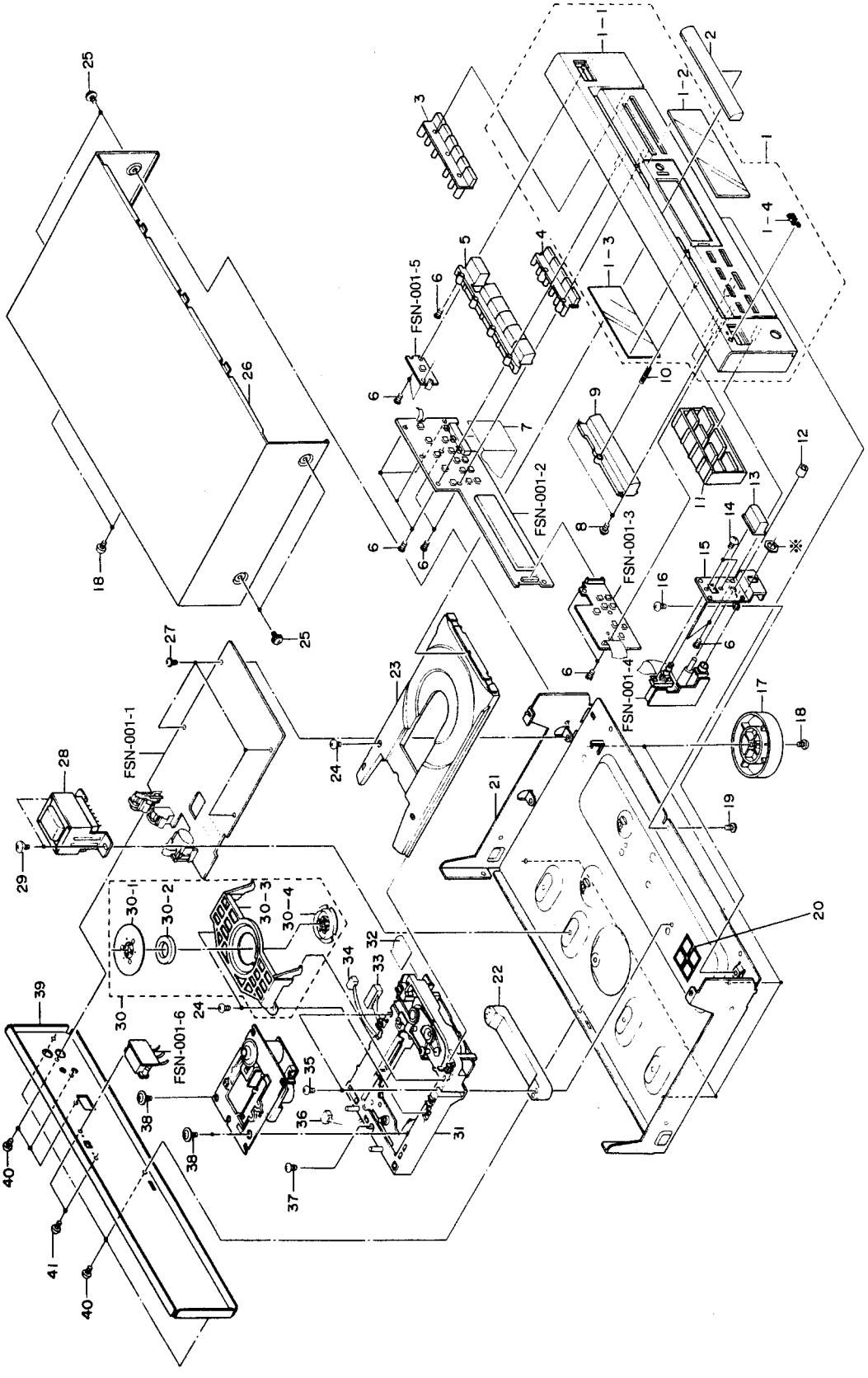
MC-Service

PARTS LIST

Contents

General Exploded View and Parts List 2-2
CD Mechanism Ass'y and Parts List 2-5
Printed Circuit Board Ass'y and Parts List 2-7
■FSN-001☐ Main & Front PC Board Ass'y 2-7
Accessories List 2-10
Packing Materials and Part Numbers 2-11

General Exploded View and Parts List



■ Parts List (**XL-V151TN**)

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	1	EFP-XLV151TNE (S	Front Panel Ass'y	1		
	1-1	E102356-018	Front Panel	1		
	1-2	E307147-001SS	Window Screen	1		
	1-3	E406285-001SS	FL Screen	1		
	1-4	E72968-001	JVC Mark	1		
	2	E307156-001SS	Fitting	1		
	3	E307154-003	Push Button	1		
	4	E307153-003SS	Push Button	1		
	5	E307151-001SS	Push Button	1	PLAY	
	6	SDSF2608Z	Screw	14		
	7	EWR631G-10TTJ2	Flat Wire	1	31Pin	
	8	E72405-001	Special Screw	2		
	9	E307149-001SS	Push Button	1	O/C	
	10	E406333-001SS	Spring	1		
	11	E307155-001SS	Push Button	1		
	12	E304525-013	Volume Knob	1		
	13	E406283-001SS	Power Button	1		
	14	SBST3006Z	Screw	2		
	15	E406286-001SS	Headphone Bracket	1		
	16	SBSG3006Z	Screw	1		
	17	FSYH4001-00A	Foot Ass'y	4		
	18	SBST3008M	Screw	6		
	19	SDSF3008M	Screw	1		
	20	E406508-001	Caution Label	1		Excpet J
	21	E102355-001SS	Chassis Base	1		
	22	E307158-001SS	Stand	1		
	23	E12289-221SS	Tray	1		
	24	SBSF3008M	Screw	3		
	25	E406308-001	Special Screw	4		
	26	E206906-002SS	Metal Cover	1		
	27	SBSG3008CC	Screw	4		
⚠	28	ETP1000-70JAJ	Power Transformer	1		J, C
⚠		ETP1000-70LAJ	Power Transformer	1		U
⚠		ETP1000-70EAJ	Power Transformer	1		A, EN, EF, G
⚠		ETP1000-70EAJBS	Power Transformer	1		BS
	29	E65389-002	Special Screw	2		
	30	E306837-001	Clamper Base Ass'y	1		
	30-1	E306836-003	Yoke	1		
	30-2	E74897-002	Magnet	1		
	30-3	E26756-001	Clampwe Base	1		
	30-4	E306835-001	Clamper	1		
	31	———	CD Mechanism Unit Ass'y	1	See page 2-5	
	32	EWR613E-10TTJ2	Flat Wire	1		
	33	EWS25A-B102	Socket Wire Ass'y	1	10Pin	
	34	EWS254-B103	Socket Wire Ass'y	1	4Pin	
	35	SBST3025Z	Screw	2		
	36	EWS256-B102	Socket Wire Ass'y	1	6Pin	
	37	SBST3008Z	Screw	1		
	38	E75871-003	Special Screw	2		
	39	E206904-021	Rear Panel	1		J
		E206904-022	Rear Panel	1		Except J, U
		E206904-023	Rear Panel	1		U
	—	E307853-001	Rating Label	1		C
		E307853-002	Rating Label	1	Made in Singapore	U
		E307853-003	Rating Label	1		U
		E307853-048	Rating Label	1		EN, EF
		E307853-049	Rating Label	1		G
	40	E73273-006	Special Screw	6		
	41	SBSF2608M	Screw	2		U
	—	E406507-001	Caution Label	1		Except J

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	–	QZL1001-001	UL Label	1		J
	–	E45858-002	CSA Label	1		C
	–	E72423-001	Caution Label	1		C
	–	E70891-001	Class 1 Label	1		Except J, C
	–	E70419-002F	Mark Label	1		G
	–	E70028-001	Approval Label	1		EN
	–	QZL1031-101	SEV Label	1		EF

The Marks for Designated Areas

⚠ Safety Parts

J.....the U.S.A.
C.....Canada
A.....Australia
EN.....Scandinavia
EF.....Continental Europe
G.....Germany
BS.....the U.K.
U.....Universal Type
No mark indicates all areas.

■ Parts List (XL-V152BK)

Please refer to XL-V151TN parts list except following parts.

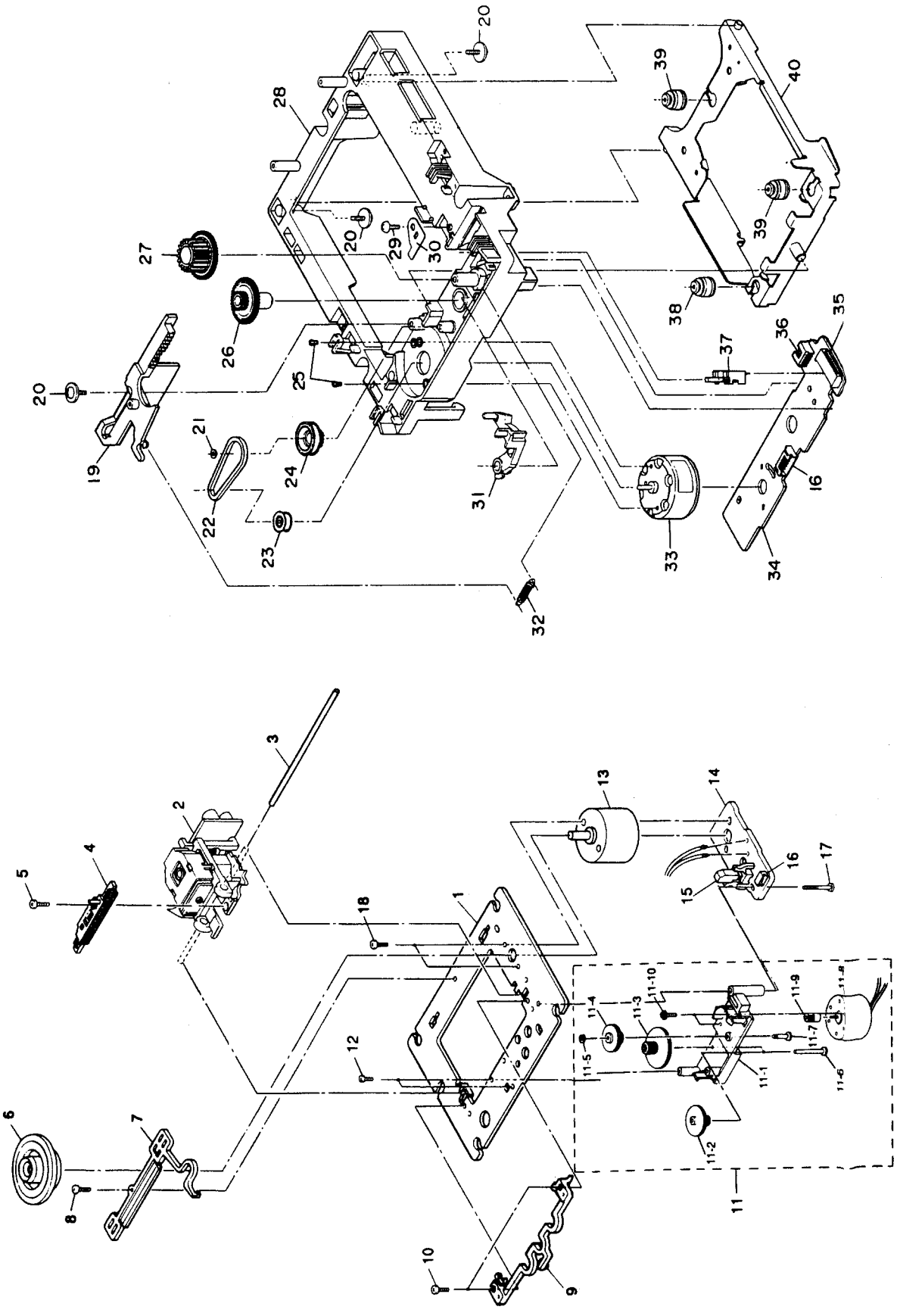
⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	1	EFP-XLV152BKE (S	Front Panel Ass'y	1		
	1-1	E102356-019	Front Panel	1		
	1-2	E307147-002SS	Window Screen	1		
	2	E307156-002SS	Fitting	1		
	3	E307154-004	Push Button	1		
	4	E307153-004SS	Push Button	1		
	5	E307151-004SS	Push Button	1	PLAY	
	9	E307149-002SS	Push Button	1	O/C	
	11	E307155-002SS	Push Button	1		
	12	E304525-014	Volume Knob	1		
	13	E406283-002SS	Power Button	1		
	17	FSYH4001-00B	Foot Ass'y	4		
	23	E12289-222SS	Tray	1		
	26	E206906-004SS	Metal Cover	1		
	39	E206904-024	Rear Panel	1		J
		E206904-025	Rear Panel	1		Excpet J, U
		E206904-026	Rear Panel	1		U
	–	E307853-006	Rating Label	1		C
		E307853-007	Rating Label	1	Made in Singapore	U
		E307853-008	Rating Label	1		U
		E307853-050	Rating Label	1		EN, EF
		E307853-051	Rating Label	1		G

The Marks for Designated Areas

⚠ Safety Parts

J.....the U.S.A.
C.....Canada
A.....Australia
EN.....Scandinavia
EF.....Continental Europe
G.....Germany
BS.....the U.K.
U.....Universal Type
No mark indicates all areas.

CD Mechanism Ass'y and Parts List



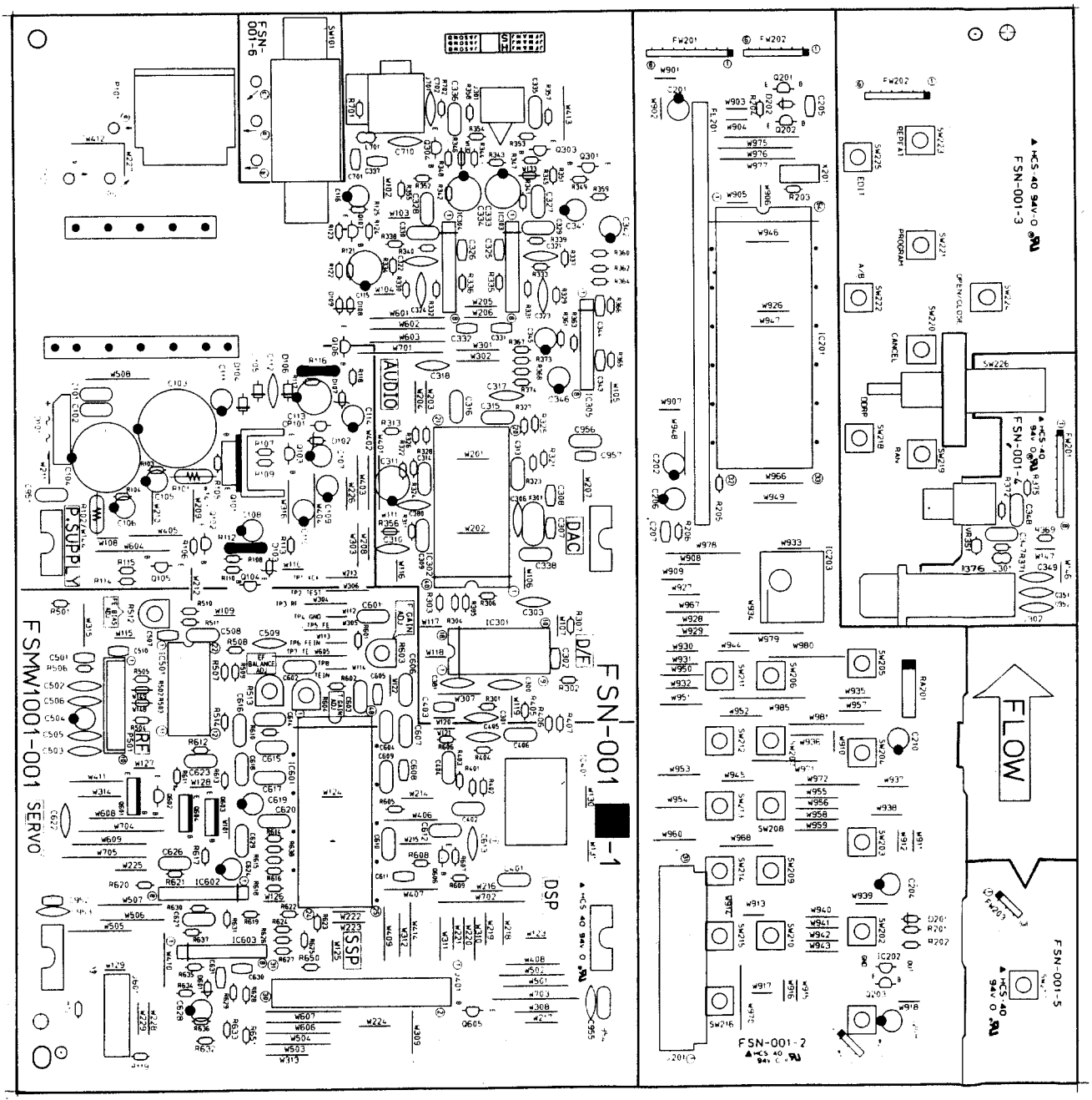
■ Parts List

Item	Part Number	Part Name	Q'ty	Description	Areas
1	E26487-003	Mechanism Base	1		
2	OPTIMA-5S	Pick up Ass'y	1		
3	E74930-003	Shaft	1		
4	E306282-001	Rack Ass'y	1		
5	SPSH2050M	Screw	1		
6	E406064-002	Turn Table Ass'y	1		
7	E306275-003	Support	1		
8	SDST2005Z	Screw	1		
9	E306277-001	Holder	1		
10	SDST2004Z	Screw	2		
11	SE10351-11	Gear Ass'y	1		
11-1	E306276-001	Gear Base	1		
11-2	E75444-001	Gear	1		
11-3	E75443-001	Gear	1		
11-4	E75445-001	Gear	1		
11-5	WDM163550	Slit Washer	1		
11-6	E75494-003	Shaft	2		
11-7	E75494-002	Shaft	1		
11-8	HKN-3A6RDNV	Feed Motor	1		
11-9	E75493-001	Pinion Gear	1		
11-10	LPSH1735Z	Screw	2		
12	E72713-001	Screw	2		
13	E74539-001B	Spindle Motor	1		
14	E12114-005(S)	Circuit Board	1		
15	ESB1100-005	Leaf Switch	1	S001	
16	EMV5109-006B	6P Plug Ass'y	2	P011	
17	E75832-001	Screw	1		
18	SDSP2003N	Screw	2		
19	E306834-001	Cam	1		
20	E65923-003	Screw	3		
21	E72024-001	Speed Nut	1		
22	E75950-002	Belt	1		
23	E75984-001	Motor Pulley	1		
24	E75985-001	Gear (1)	1		
25	SPSK2640Z	Screw	2		
26	E75986-002	Gear (2)	1		
27	E75987-001	Gear (3)	1		
28	E12288-002	Loading Base	1		
29	SBSF3008Z	Screw	1		
30	E75988-001	Plate	1		
31	E306833-001	Lever	1		
32	E75989-001	Spring	1		
33	RF-500TB-12560	Loading Motor	1		
34	EMW10045-001(S)	Circuit Board	1		
35	EMV7123-013R	Connector	1	13Pin	
36	EMV5109-004B	Plug Ass'y	1	4Pin	
37	ESS1200-002	Switch	1		
38	E75609-002	Insulator	1		
39	E75609-001	Insulator	2		
40	E307087-001	Elevator Base Ass'y	1		

Printed Circuit Board Ass'y and Parts List

■FSN-001□ Main & Front PC Board Ass'y

Note : FSN-001 □ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Designated Areas
FSN-001 [A]	the U.S.A., Canada
FSN-001 [B]	Scandinavia Continental Europe
FSN-001 [C]	Germany
FSN-001 [D]	Australia
FSN-001 [E]	the U.K.
FSN-001 [F]	Universal Type

Transistors

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	Q101	2SB1187(E,F)	SILICON	ROHM	
	Q102	2SC2060(Q,R)	SILICON	ROHM	
	Q103	2SD1302(S,T)	SILICON	MATSUSHITA	
	Q104	2SA933S(R,S)	SILICON	ROHM	
	Q105	2SD1302(S,T)	SILICON	MATSUSHITA	
	Q106	2SA933S(R,S)	SILICON	ROHM	
	Q107	2SA933S(R,S)	SILICON	ROHM	
	Q201	DTA114YS	SILICON	ROHM	
	Q202	DTA114YS	SILICON	ROHM	
	Q203	DTA114YS	SILICON	ROHM	
	Q303	2SD1302(S,T)	SILICON	MATSUSHITA	
	Q304	2SD1302(S,T)	SILICON	MATSUSHITA	
	Q601	2SD2037(E,F)	SILICON	ROHM	
	Q602	2SA934(Q,R)	SILICON	ROHM	
	Q603	2SD2037(E,F)	SILICON	ROHM	
	Q604	2SB1357(E,F)	SILICON	ROHM	
	Q605	DTC144ES	SILICON	ROHM	
	Q606	2SC1740S(R,S)	SILICON	ROHM	

⚠ : SAFETY PARTS

I. C. s

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	IC201	HD404019RB70S	I.C.	HITACHI	
	IC202	MN1281(P,Q)	I.C.	MATSUSHITA	
	IC301	CXD2554P	I.C.	1680	
	IC302	JCE4501	I.C.	MATSUSHITA	
	IC303	M5218AL	I.C.	MITSUBISHI	
	IC304	M5218AL	I.C.	MITSUBISHI	
	IC305	VC4580L	I.C.	DAINICHI	
	IC401	CXD2500AQ	I.C.	1680	
	IC501	CXA1571S	I.C.	1680	
	IC601	CXA1372S	I.C.	1680	
	IC602	STA341M(A)	I.C.	SANKEN	
	IC603	M5218AL	I.C.	MITSUBISHI	

⚠ : SAFETY PARTS

Diodes

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
⚠	D101	S1VB20F	SILICON	SINDENGEN	
	D102	MTZ5.6JB	ZENER	ROHM	
	D103	MTZ6.2JC	ZENER	ROHM	
	D104	1SR139-200	SILICON	ROHM	
	D105	1SR139-200	SILICON	ROHM	
	D106	1SR139-200	SILICON	ROHM	
	D107	MTZ33JC	ZENER		
	D108	1SS133	SILICON	ROHM	
	D109	1SS133	SILICON	ROHM	
	D201	1SS119	SILICON	HITACHI	
	D202	1SS119	SILICON	HITACHI	
	D601	1SS133	SILICON	ROHM	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	C101	QFV81HJ-104	0.1MF	50V	T.FILM	
	C102	QFV81HJ-104	0.1MF	50V	T.FILM	
	C103	QETB1CM-338J7	3300MF	16V	ELECTRO	
	C104	QETB1EM-228J7	2200MF	25V	ELECTRO	
	C105	QETB1CM-227	220MF	16V	ELECTRO	B
	C105	QETB1CM-227	220MF	16V	ELECTRO	C
	C105	QETB1CM-227	220MF	16V	ELECTRO	D
	C105	QETB1CM-227	220MF	16V	ELECTRO	E
	C105	QETB1CM-227	220MF	16V	ELECTRO	F
	C106	QETB1CM-227	220MF	16V	ELECTRO	B

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	C106	QETB1CM-227	220MF	16V	ELECTRO	C
	C106	QETB1CM-227	220MF	16V	ELECTRO	D
	C106	QETB1CM-227	220MF	16V	ELECTRO	E
	C106	QETB1CM-227	220MF	16V	ELECTRO	F
	C107	QETB1HM-225	2.2MF	50V	ELECTRO	
	C108	QETB1HM-225	2.2MF	50V	ELECTRO	
	C109	QETB0JM-227	220MF	6.3V	ELECTRO	
	C110	QETB1AM-476	47MF	10V	ELECTRO	
	C111	QETB1EM-107	100MF	25V	ELECTRO	
	C112	QCF21HP-223	0.022MF	50V	CERAMIC	
	C113	QETB1HM-107	100MF	50V	ELECTRO	
	C114	QETB1HM-475	4.7MF	50V	ELECTRO	
	C115	QETB1CM-227	220MF	16V	ELECTRO	
	C116	QETB1CM-226	22MF	16V	ELECTRO	
	C202	QER61HM-226	22MF	50V	ELECTRO	
	C204	QER50JM-107	100MF	6.3V	ELECTRO	
	C205	QCBB1HK-331	330PF	50V	CERAMIC	
	C206	QER51HM-475	4.7MF	50V	ELECTRO	
	C207	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C208	QER51CM-476	47MF	16V	ELECTRO	
	C300	QCF21HP-223	0.022MF	50V	CERAMIC	
	C301	QCS21HJ-5R0	5PF	50V	CERAMIC	
	C302	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C303	QCF21HP-223	0.022MF	50V	CERAMIC	
	C306	QCS21HJ-470	47PF	50V	CERAMIC	
	C307	QCT30CH-120	12PF	50V	CERAMIC	
	C308	QCT30CH-3R3	3.3PF	50V	CERAMIC	
	C309	QFV81HJ-104	0.1MF	50V	T.FILM	
	C310	QCS21HJ-5R0	5PF	50V	CERAMIC	
	C311	QETB0JM-477	470MF	6.3V	ELECTRO	
	C313	QFV81HJ-104	0.1MF	50V	T.FILM	
	C314	QFV81HJ-104	0.1MF	50V	T.FILM	
	C315	QFV81HJ-104	0.1MF	50V	T.FILM	
	C316	QFV81HJ-104	0.1MF	50V	T.FILM	
	C317	QCS21HJ-221	220PF	50V	CERAMIC	
	C318	QCS21HJ-221	220PF	50V	CERAMIC	
	C321	QCS21HJ-121	120PF	50V	CERAMIC	
	C322	QCS21HJ-121	120PF	50V	CERAMIC	
	C323	QCS21HJ-121	120PF	50V	CERAMIC	
	C324	QCS21HJ-121	120PF	50V	CERAMIC	
	C325	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C326	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C327	QFN81HJ-392	3900PF	50V	MYLAR	
	C328	QFN81HJ-392	3900PF	50V	MYLAR	
	C329	QFN81HJ-223	0.022MF	50V	MYLAR	
	C330	QFN81HJ-223	0.022MF	50V	MYLAR	
	C331	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C332	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C333	QETB1EM-107	100MF	25V	ELECTRO	
	C334	QETB1EM-107	100MF	25V	ELECTRO	
	C335	QFN81HJ-562	5600PF	50V	MYLAR	
	C336	QFN81HJ-562	5600PF	50V	MYLAR	
	C337	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C338	QFV81HJ-104	0.1MF	50V	T.FILM	
	C341	QETB1HM-475	4.7MF	50V	ELECTRO	
	C342	QETB1HM-475	4.7MF	50V	ELECTRO	
	C343	QCBB1HK-471	470PF	50V	CERAMIC	
	C344	QCBB1HK-471	470PF	50V	CERAMIC	
	C345	QETB1CM-476	47MF	16V	ELECTRO	
	C346	QETB1CM-476	47MF	16V	ELECTRO	
	C349	QCF21HP-223	0.022MF	50V	CERAMIC	
	C351	QCF21HP-103	0.01MF	50V	CERAMIC	
	C352	QCF21HP-103	0.01MF	50V	CERAMIC	
	C380	QCS21HJ-5R0	5PF	50V	CERAMIC	
	C381	QCS21HJ-5R0	5PF	50V	CERAMIC	
	C401	QCZ0202-155	1.5MF	25V	CERAMIC	
	C402	QFN81HJ-473	0.047MF	50V	MYLAR	
	C403	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C404	QFN81HJ-152	1500PF	50V	MYLAR	
	C405	QCF21HP-102	1000PF	50V	CERAMIC	
	C406	QCZ0202-155A	1.5MF	25V	CERAMIC	
	C501	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C502	QCS21HJ-100	10PF	50V	CERAMIC	
	C503	QCS21HJ-100	10PF	50V	CERAMIC	
	C504	QETB1AM-476	47MF	10V	ELECTRO	
	C505	QCS21HJ-820	82PF	50V	CERAMIC	
	C506	QCS21HJ-101	100PF	50V	CERAMIC	
	C507	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C508	QCZ0202-155	1.5MF	25V	CERAMIC	
	C509	QCS21HJ-220	22PF	50V	CERAMIC	
	C510	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C601	QFN81HJ-182	1800PF	50V	MYLAR	
	C603	QFN81HJ-222	2200PF	50V	MYLAR	
	C604	QFN81HJ-222	2200PF	50V	MYLAR	
	C605	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C606	QFN81HJ-333	0.033MF	50V	MYLAR	
	C607	QFN81HJ-103	0.01MF	50V	MYLAR	
	C608	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C609	QFN81HJ-333	0.033MF	50V	MYLAR	
	C610	QCZ0202-155A	1.5MF	25V	CERAMIC	
	C611	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C612	QFV81HJ-104	0.1MF	50V	T.FILM	
	C613	QCS21HJ-471	470PF	50V	CERAMIC	
	C614	QFN81HJ-104	0.1MF	50V	MYLAR	
	C615	QFN81HJ-333	0.033MF	50V	MYLAR	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C616	QFN81HJ-473	0.047MF 50V MYLAR	
	C617	QFN81HJ-473	0.047MF 50V MYLAR	
	C618	QFN81HJ-473	0.047MF 50V MYLAR	
	C619	QETB1HM-475	4.7MF 50V ELECTRO	
	C620	QFN81HJ-104	0.1MF 50V MYLAR	
	C622	QCF21HP-223	0.022MF 50V CERAMIC	
	C623	QFN81HJ-563	0.056MF 50V MYLAR	
	C624	QETB1EM-106	10MF 25V ELECTRO	
	C626	QFN81HJ-183	0.018MF 50V MYLAR	
	C627	QFN81HJ-103	0.01MF 50V MYLAR	
	C628	QETB1HM-475	4.7MF 50V ELECTRO	
	C629	QFN81HJ-333	0.033MF 50V MYLAR	
	C630	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C631	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C701	QCBB1HK-101	100PF 50V CERAMIC	
	C702	QCF21HP-103	0.01MF 50V CERAMIC	A
	C710	QCS21HJ-101	100PF 50V CERAMIC	
	C951	QCZ0202-155A	1.5MF 25V CERAMIC	
	C953	QCS21HJ-180	18PF 50V CERAMIC	
	C955	QCF21HP-472	4700PF 50V CERAMIC	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
⚠	R101	PTH61G30BD2R2N	FUSIBLE	B
⚠	R101	PTH61G30BD2R2N	FUSIBLE	C
⚠	R101	PTH61G30BD2R2N	FUSIBLE	D
⚠	R101	PTH61G30BD2R2N	FUSIBLE	E
⚠	R101	PTH61G30BD2R2N	FUSIBLE	F
⚠	R102	PTH61G30BD2R2N	FUSIBLE	B
⚠	R102	PTH61G30BD2R2N	FUSIBLE	C
⚠	R102	PTH61G30BD2R2N	FUSIBLE	D
⚠	R102	PTH61G30BD2R2N	FUSIBLE	E
⚠	R102	PTH61G30BD2R2N	FUSIBLE	F
	R103	QRD167J-104	100K 1/6W CARBON	
	R104	QRD167J-104	100K 1/6W CARBON	
	R105	QRD167J-222	2.2K 1/6W CARBON	
	R106	QRD167J-222	2.2K 1/6W CARBON	
	R107	QRD167J-221	220 1/6W CARBON	
	R108	QRD167J-221	220 1/6W CARBON	
	R109	QRD167J-221	220 1/6W CARBON	
	R110	QRD167J-221	220 1/6W CARBON	
⚠	R112	QRZ0077-100	10 1/4W FUSIBLE	
	R113	QRD167J-331	330 1/6W CARBON	
	R114	QRD167J-202	2K 1/6W CARBON	
	R115	QRD167J-103	10K 1/6W CARBON	
⚠	R116	QRZ0077-560	56 1/4W FUSIBLE	
	R117	QRD167J-202	2K 1/6W CARBON	
	R118	QRD167J-121	120 1/6W CARBON	
	R119	QRD167J-152	1.5K 1/6W CARBON	
	R120	QRD167J-152	1.5K 1/6W CARBON	
	R121	QRD167J-221	220 1/6W CARBON	
	R122	QRD167J-221	220 1/6W CARBON	
	R123	QRD167J-822	8.2K 1/6W CARBON	
	R124	QRD167J-683	68K 1/6W CARBON	
	R125	QRD167J-221	220 1/6W CARBON	
	R201	QRD167J-821	820 1/6W CARBON	
	R202	QRD167J-103	10K 1/6W CARBON	
	R203	QRD167J-105	1M 1/6W CARBON	
	R204	QRD167J-472	4.7K 1/6W CARBON	
	R205	QRD167J-103	10K 1/6W CARBON	
	R206	QRD167J-473	47K 1/6W CARBON	
	R301	QRD167J-101	100 1/6W CARBON	
	R302	QRD167J-472	4.7K 1/6W CARBON	
	R303	QRD167J-102	1K 1/6W CARBON	
	R304	QRD167J-102	1K 1/6W CARBON	
	R305	QRD167J-102	1K 1/6W CARBON	
	R306	QRD167J-102	1K 1/6W CARBON	
	R307	QRD167J-472	4.7K 1/6W CARBON	
	R311	QRD167J-221	220 1/6W CARBON	
	R313	QRD167J-101	100 1/6W CARBON	
	R321	QRD167J-183	18K 1/6W CARBON	
	R322	QRD167J-183	18K 1/6W CARBON	
	R323	QRD167J-183	18K 1/6W CARBON	
	R324	QRD167J-183	18K 1/6W CARBON	
	R325	QRD167J-183	18K 1/6W CARBON	
	R326	QRD167J-183	18K 1/6W CARBON	
	R327	QRD167J-183	18K 1/6W CARBON	
	R328	QRD167J-183	18K 1/6W CARBON	
	R329	QRD167J-273	27K 1/6W CARBON	
	R330	QRD167J-273	27K 1/6W CARBON	
	R331	QRD167J-273	27K 1/6W CARBON	
	R332	QRD167J-273	27K 1/6W CARBON	
	R333	QRD167J-333	33K 1/6W CARBON	
	R334	QRD167J-333	33K 1/6W CARBON	
	R335	QRD167J-333	33K 1/6W CARBON	
	R336	QRD167J-333	33K 1/6W CARBON	
	R337	QRD167J-561	560 1/6W CARBON	
	R338	QRD167J-561	560 1/6W CARBON	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R339	QRD167J-511	510 1/6W CARBON	
	R340	QRD167J-511	510 1/6W CARBON	
	R341	QRD167J-183	18K 1/6W CARBON	
	R342	QRD167J-183	18K 1/6W CARBON	
	R343	QRD167J-273	27K 1/6W CARBON	
	R344	QRD167J-273	27K 1/6W CARBON	
	R347	QRD167J-331	330 1/6W CARBON	
	R348	QRD167J-331	330 1/6W CARBON	
	R351	QRD167J-103	10K 1/6W CARBON	
	R352	QRD167J-103	10K 1/6W CARBON	
	R353	QRD167J-151	150 1/6W CARBON	
	R354	QRD167J-151	150 1/6W CARBON	
	R355	QRD167J-473	47K 1/6W CARBON	
	R356	QRD167J-560	56 1/6W CARBON	B
	R356	QRD167J-560	56 1/6W CARBON	C
	R356	QRD167J-560	56 1/6W CARBON	D
	R356	QRD167J-560	56 1/6W CARBON	E
	R356	QRD167J-560	56 1/6W CARBON	F
	R357	QRD167J-561	560 1/6W CARBON	
	R358	QRD167J-561	560 1/6W CARBON	
	R359	QRD167J-473	47K 1/6W CARBON	
	R360	QRD167J-473	47K 1/6W CARBON	
	R361	QRD167J-103	10K 1/6W CARBON	
	R362	QRD167J-103	10K 1/6W CARBON	
	R363	QRD167J-273	27K 1/6W CARBON	
	R364	QRD167J-273	27K 1/6W CARBON	
	R365	QRD167J-562	5.6K 1/6W CARBON	
	R366	QRD167J-562	5.6K 1/6W CARBON	
	R367	QRD167J-271	270 1/6W CARBON	
	R368	QRD167J-271	270 1/6W CARBON	
	R369	QRD167J-680	68 1/6W CARBON	
	R371	QRD167J-390	39 1/6W CARBON	
	R372	QRD167J-390	39 1/6W CARBON	
	R373	QRD167J-271	270 1/6W CARBON	
	R374	QRD167J-271	270 1/6W CARBON	
	R375	QRD167J-680	68 1/6W CARBON	
	R401	QRD167J-332	3.3K 1/6W CARBON	
	R402	QRD167J-682	6.8K 1/6W CARBON	
	R403	QRD167J-103	10K 1/6W CARBON	
	R404	QRD167J-113	11K 1/6W CARBON	
	R405	QRD167J-102	1K 1/6W CARBON	
	R406	QRD167J-102	1K 1/6W CARBON	
	R407	QRD167J-102	1K 1/6W CARBON	
	R501	QRD167J-102	1K 1/6W CARBON	
	R504	QRD167J-183	18K 1/6W CARBON	
	R505	QRD167J-183	18K 1/6W CARBON	
	R506	QRD167J-121	120 1/6W CARBON	
	R507	QRD167J-752	7.5K 1/6W CARBON	
	R508	QRD167J-332	3.3K 1/6W CARBON	
	R509	QRD167J-682	6.8K 1/6W CARBON	
	R510	QRD167J-122	1.2K 1/6W CARBON	
	R511	QRD167J-103	10K 1/6W CARBON	
	R512	QVPA601-203A	20K VARIABLE	
	R513	QVPA601-203A	20K VARIABLE	
	R514	QRD167J-103	10K 1/6W CARBON	
	R601	QRD167J-472	4.7K 1/6W CARBON	
	R602	QRD167J-472	4.7K 1/6W CARBON	
	R603	QVPA601-203A	20K VARIABLE	
	R604	QVPA601-203A	20K VARIABLE	
	R605	QRD167J-102	1K 1/6W CARBON	
	R606	QRD167J-104	100K 1/6W CARBON	
	R607	QRD167J-103	10K 1/6W CARBON	
	R608	QRD167J-183	18K 1/6W CARBON	
	R609	QRD167J-183	18K 1/6W CARBON	
	R610	QRD167J-224	220K 1/6W CARBON	
	R611	QRD167J-2R2	2.2 1/6W CARBON	
	R612	QRD167J-823	82K 1/6W CARBON	
	R613	QRD167J-124	120K 1/6W CARBON	
	R614	QRD167J-2R2	2.2 1/6W CARBON	
	R615	QRD167J-224	220K 1/6W CARBON	
	R616	QRD167J-333	33K 1/6W CARBON	
	R617	QRD167J-123	12K 1/6W CARBON	
	R618	QRD167J-514	510K 1/6W CARBON	
	R619	QRD167J-2R2	2.2 1/6W CARBON	
	R620	QRD167J-183	18K 1/6W CARBON	
	R621	QRD167J-363	36K 1/6W CARBON	
	R622	QRD167J-124	120K 1/6W CARBON	
	R623	QRD167J-472	4.7K 1/6W CARBON	
	R626	QRD167J-153	15K 1/6W CARBON	
	R627	QRD167J-333	33K 1/6W CARBON	
	R628	QRD167J-752	7.5K 1/6W CARBON	
	R629	QRD167J-752	7.5K 1/6W CARBON	
	R630	QRD167J-333	33K 1/6W CARBON	
	R631	QRD167J-470	47 1/6W CARBON	
	R632	QRD167J-513	51K 1/6W CARBON	
	R633	QRD167J-513	51K 1/6W CARBON	
	R634	QRD167J-683	68K 1/6W CARBON	
	R635	QRD167J-683	68K 1/6W CARBON	
	R636	QRD167J-684	680K 1/6W CARBON	
	R637	QRD167J-470	47 1/6W CARBON	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R638	QRD167J-184	180K 1/6W CARBON	
	R650	QRD167J-103	10K 1/6W CARBON	
	R651	QRD167J-103	10K 1/6W CARBON	
	R701	QRD167J-471	470 1/6W CARBON	
	RA201	QRB045J-473	47K 1/8W R.NETWORK	
	VR351	QVAB99C-E53B	5K VARIABLE	

⚠ : SAFETY PARTS

Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
		E306805-010	SPACER	
		E306951-221SS	FL DISPLAY HOLDER	
		E65396-003	EARTH PLATE	
		E70306-001	HEAT SINK	
		E75464-221SS	EARTH PLATE	
		FSMW1001-001	CIRCUIT BOARD	
		SBSG3008CC	SCREW	
	J201	VMC0161-R31	MALE CONNECTOR(31PIN)	
	J301	EMN00TV-219AJ2	2P PIN JACK	
	J302	QMS6302-131	HEADPHONE JACK(3IPIN)	
	J401	VMC0161-031	CONNECT TERMINAL(13PIN)	
	J601	VMC0161-013	MALE CONNECTOR(10PIN)	
	J701	QMS3501-020	MINI JACK	
	L301	EQL4004-1R0	INDUCTOR	
	L701	EQL4004-1R0	INDUCTOR	
	P101	QMCB001-E03H	AC INLET	A
	P101	QMCB001-E02H	AC SOCKET	B
	P101	QMCB001-E02H	AC SOCKET	C
	P101	QMCB001-E02H	AC SOCKET	D
	P101	QMCB001-E02HBS	AC SOCKET	E
	P101	QMCB001-E02H	AC SOCKET	F
	P501	EMV5109-010A	PLUG ASSY	
	X201	ECX0004-194KM	RESONATOR	
	X301	ECX0169-344KL	RESONATOR	
⚠	CP101	ICP-N15	I.C. PROTECTOR	

⚠ : SAFETY PARTS

Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	FL201	ELU0001-114	FL TUBE	
	FW201	VWS108-214K4K	FLAT WIRE	
	FW202	VWS106-184K4K	FLAT WIRE	
	FW203	EWR33A-08NN	FLAT WIRE	
	SW101	QSS1L22-E01	SLIDE SWITCH	F
	SW201	ESP0001-018	TACT SWITCH(STOP/CLEAR)	
	SW202	ESP0001-018	TACT SWITCH(FOWARD SKIP)	
	SW203	ESP0001-018	TACT SWITCH(BACKWARD SKIP)	
	SW204	ESP0001-018	TACT SWITCH(FOWARD SCAN)	
	SW205	ESP0001-018	TACT SWITCH(BACKWARD SCAN)	
	SW206	ESP0001-018	TACT SWITCH(1)	
	SW207	ESP0001-018	TACT SWITCH(2)	
	SW208	ESP0001-018	TACT SWITCH(3)	
	SW209	ESP0001-018	TACT SWITCH(4)	
	SW210	ESP0001-018	TACT SWITCH(5)	
	SW211	ESP0001-018	TACT SWITCH(6)	
	SW212	ESP0001-018	TACT SWITCH(7)	
	SW213	ESP0001-018	TACT SWITCH(8)	
	SW214	ESP0001-018	TACT SWITCH(9)	
	SW215	ESP0001-018	TACT SWITCH(10)	
	SW216	ESP0001-018	TACT SWITCH(+10)	
	SW217	ESP0001-018	TACT SWITCH(PLAY/PAUSE)	
	SW218	ESP0001-018	TACT SWITCH(DDRP)	
	SW219	ESP0001-018	TACT SWITCH(RAN)	
	SW220	ESP0001-018	TACT SWITCH(CANCEL)	
	SW221	ESP0001-018	TACT SWITCH(PROGRAM)	
	SW222	ESP0001-018	TACT SWITCH(A/B)	
	SW223	ESP0001-018	TACT SWITCH(PRESET)	
	SW224	ESP0001-018	TACT SWITCH(OPEN/CLOSE)	
	SW225	ESP0001-018	TACT SWITCH(EDIT)	
	SW226	QST4101-E20	PUSH SWITCH(POWER)	

⚠ : SAFETY PARTS

Accessories List

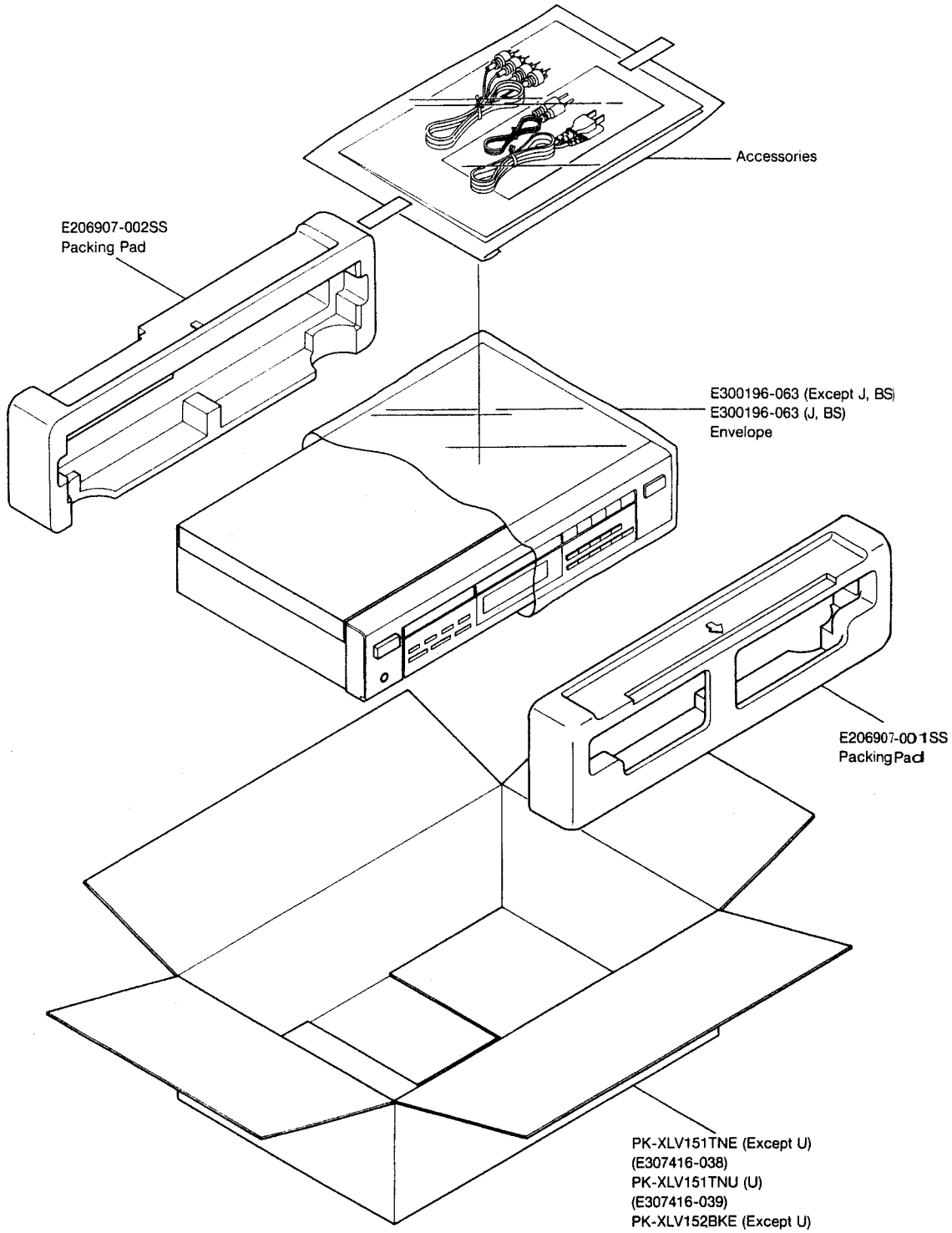
	Part Number	Part Name	Q'ty	Description	Areas
	E30580-1829B	Instruction Book	1		J,G,BS
	E30580-1802A	Instruction Book	1		C,U,G,EF
	E30580-1864A	Instruction Book	1		EN
	BT-20047F	Warranty Card	1		J
	BT-20025K	Warranty Card	1		C
	BT-20117	Warranty Card	1		G
	BT20060	Warranty Card	1		BS
	BT-20122	Audio Warranty Card	1		A
	BT-20122-1	LTD Sticker	1	for New Zealand	A
	BT-20044G	Safety Instruction Sheet	1		J
	BT-20108A	Service Information Card	1		J
	BT20071A	Service Center List	1		C
	BT20066A	EEC Agency	1		BS
	E43486-340A	Safety Sheet	1		BS
	EWP302-011	Signal Cord	1		
	EWP805-001	1P Plug Cord	1		
⚠	QMP1E00-183	Power Cord	1		J,C
⚠	QMP25C0-183	Power Cord	1		A
⚠	QMP39G0-183E	Power Cord	1		EN,EF,G
⚠	QMP5510-183BS	Power Cord	1		BS
⚠	QMP7530-183	Power Cord	1		U
⚠	V04062-001	Siemens Plug	1		U
	E35497-022	Caution Sheet	1		U
	E66146-003	Envelope	1		J
	E300196-010	Envelope	1		Except J,BS
	E300196-010B	Envelope	1		J,BS

The Marks for Designated Areas

J·····the U.S.A.
C·····Canada
A·····Australia
EN·····Scandinavia
EF·····Continental Europe
G·····Germany
BS·····the U.K.
U·····Universal Type
No mark indicates all areas.

⚠ Safety Parts

Packing Materials and Part Numbers



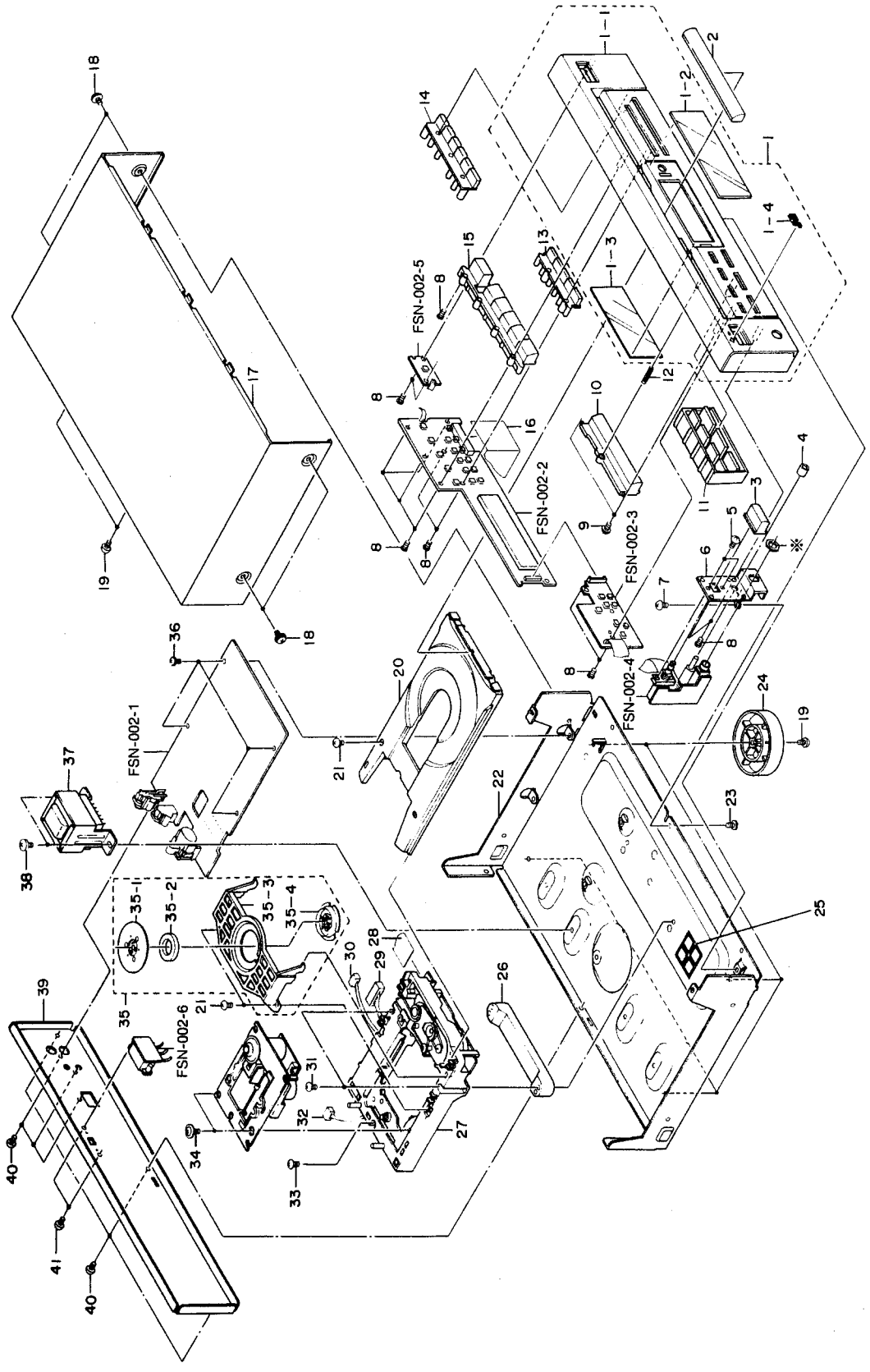
The Marks for Designated Areas	
J·····the U.S.A.	G·····Germany
C·····Canada	BS·····the U.K.
A·····Australia	U·····Universal Type
EN·····Scandinavia	No mark indicates all areas.
EF·····Continental Europe	

PARTS LIST

Contents

General Exploded View and Parts List 3-2
CD Mechanism Ass'y and Parts List 3-5
Printed Circuit Board Ass'y and Parts List 3-7
■FSN-002 □ Main & Front PC Board Ass'y 3-7
Accessories List 3-11
Packing Materials and Part Numbers 3-12

General Exploded View and Parts List



■XL-V251TN Parts List

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	1	EFP-XLV251TNE(S	Front Panel Ass'y	1		
	1-1	E102356-020	Front Panel	1		
	1-2	E307147-003SS	Window Screen	1		
	1-3	E406285-001SS	FL Screen	1		
	1-4	E72968-001	JVC Mark	1		
	2	E307156-001SS	Fitting	1		
	3	E406283-001SS	Push Button	1	Power	
	4	E304525-013	Volume Knob	1		
	5	SBST3006Z	Screw	2		
	6	E406286-001SS	Headphone Bracket	1		
	7	SBSG3006Z	Screw	1		
	8	SDSF2608Z	Screw	14		
	9	E72405-001	Screw	2		
	10	E307149-001SS	Button	1	Open / Close	
	11	E307155-001SS	Push Button	1		
	12	E406333-001SS	Spring	1		
	13	E307153-003SS	Push Button	1	Random	
	14	E307154-003	Push Button	1		
	15	E307151-001SS	Push Button	1	Play	
	16	EWR631G-10TTJ2	Flat Cable	1	31Pin	
	17	E206906-002SS	Metal Cover	1		
	18	E406308-001	Special Screw	4		
	19	SBST3008M	Screw	6		
	20	E12289-221SS	Tray	1		
	21	SBSF3008Z	Screw	3		
	22	E102355-001SS	Chassis Base	1		
	23	SDSF3008M	Screw	1		
	24	FSYH4001-00A	Foot	4		
	25	E406507-001	Caution Label	1		Except J
	26	E307158-001SS	Stand	1		
	27	————	CD Mechanism Unit Ass'y	1	See page 3-5	
	28	EWR613E-10TTJ2	Flat Cable	1	13Pin	
	29	EWS25A-B102	Socket Wire Ass'y	1	10Pin	
	30	EWS254-B103	Socket Wire Ass'y	1	4Pin	
	31	SBST3025Z	Screw	2		
	32	EWS256-B102	Socket Wire Ass'y	1	6Pin	
	33	SBST3008Z	Screw	1		
	34	E75871-003	Special Screw	2		
	35	E306837-001	Clamper Base Ass'y	1		
	35-1	E306836-003	Yoke	1		
	35-2	E74897-002	Magnet	1		
	35-3	E26756-001	Clamper Base	1		
	35-4	E306835-001	Clamper	1		
	36	SBSG3008CC	Screw	4		
⚠	37	ETP1000-70JAJ	Power Transformer	1		J, C
⚠		ETP1000-70LAJ	Power Transformer	1		U
⚠		ETP1000-70EAJ	Power Transformer	1		EN, EF, G, A
⚠		ETP1000-70EAJBS	Power Transformer	1		BS
	38	E65389-002	Special Screw	2		
	39	E206904-027	Rear Panel	1		J
		E206904-028	Rear Panel	1		Except J, U
		E206904-029	Rear Panel	1		U
	—	E307853-011	Rating Label	1		C
	—	E307853-012	Rating Label	1	Made in Singapore	U
	—	E307853-013	Rating Label	1		U
	—	E307853-052	Rating Label	1		EN, EF
	—	E307853-053	Rating Label	1		G
	40	E73273-006	Special Screw	6		
	41	SBSF2608M	Screw	2		U
	—	E72423-001	Caution Label	1		C

⚠: Safety Parts

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	—	E70891-001	Class 1 Label	1		U, EN, EF, G, A, BS
	—	E70028-001	Approval Label	1		EN
	—	E70419-002F	F. Mark Label	1		G
	—	QZL1001-001	UL Label	1		J
	—	E45858-002	CSA Label	1		J
	—	QZL1031-101	SEV Label	1		EF

⚠: Safety Parts

The Marks Designated Areas

J·····the U.S.A.
C·····Canada
A·····Australia
G·····Germany
BS·····the U.K.
EN·····Scandinavia
EF·····Continental Europe
U·····Universal Type
No mark indicates all areas.

■XL-V252BK Parts List

Please refer to XL-V251TN parts list except following parts.

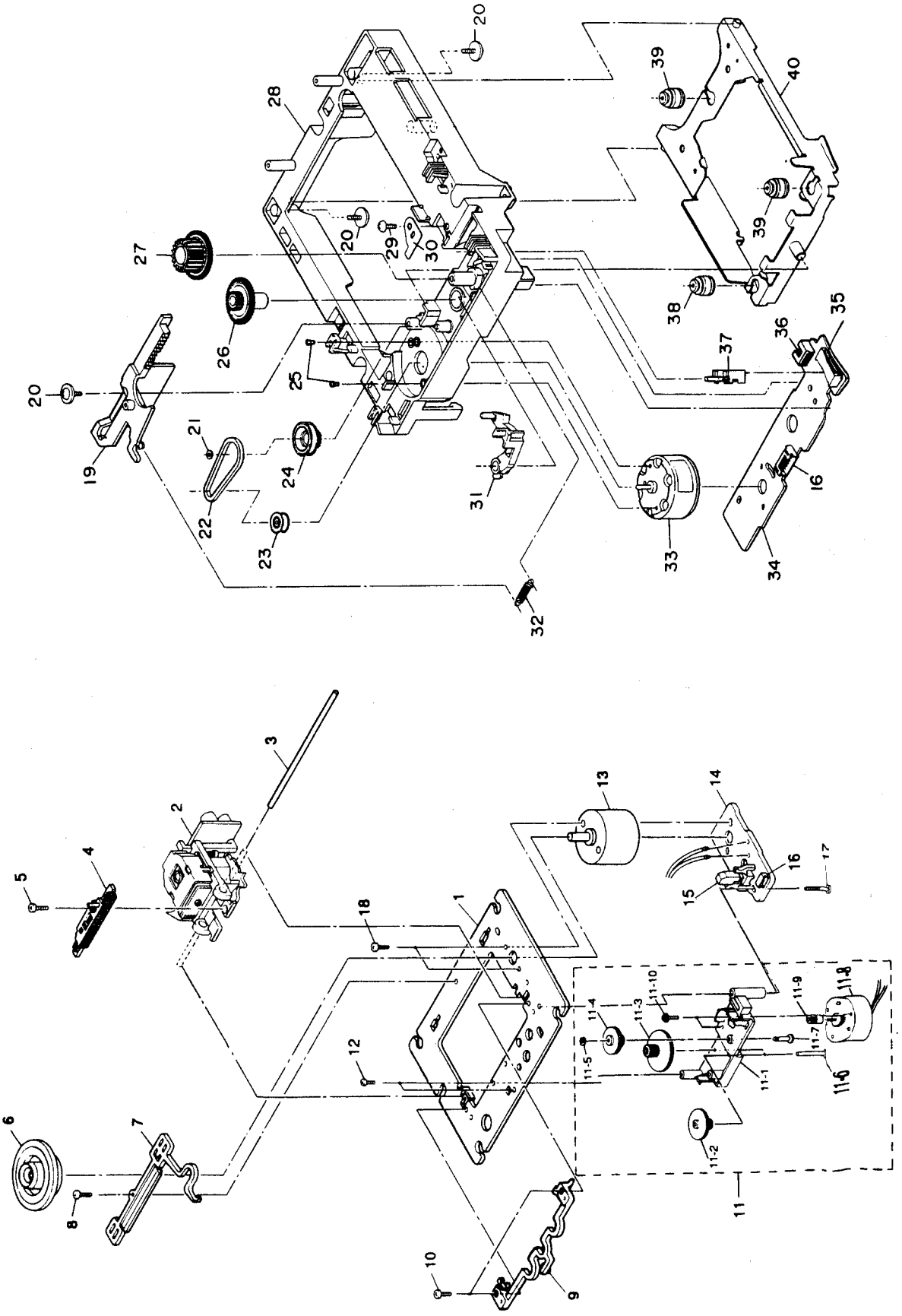
⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	1	EFP-XLV252BKE(S	Front Panel Ass'y	1		
	1-1	E102356-021	Front Panel	1		
	1-2	E307147-005SS	Window Screen	1		
	2	E307156-002SS	Fitting	1		
	3	E406283-002SS	Push Button	1	Power	
	4	E304525-014	Volume Knob	1		
	10	E307149-002SS	Button	1	Open / Close	
	11	E307155-002SS	Push Button	1		
	13	E307153-004SS	Push Button	1	Random	
	14	E307154-004	Push Button	1		
	15	E307151-004SS	Push Button	1	Play	
	17	E206906-004SS	Metal Cover	1		
	20	E12289-222SS	Tray	1		
	24	FSYH4001-00B	Foot Ass'y	4		
	39	E206904-030	Rear Panel	1		J
		E206904-031	Rear Panel	1		Except J, U
		E206904-032	Rear Panel	1		U
	—	E307853-016	Rating Label	1		C
	—	E307853-017	Rating Label	1	Made in Singapore	U
	—	E307853-018	Rating Label	1		U
	—	E307853-054	Rating Label	1		EN, EF
	—	E307853-055	Rating Label	1		G

⚠: Safety Parts

The Marks Designated Areas

J·····the U.S.A.
C·····Canada
A·····Australia
G·····Germany
BS·····the U.K.
EN·····Scandinavia
EF·····Continental Europe
U·····Universal Type
No mark indicates all areas.

CD Mechanism Ass'y and Parts List



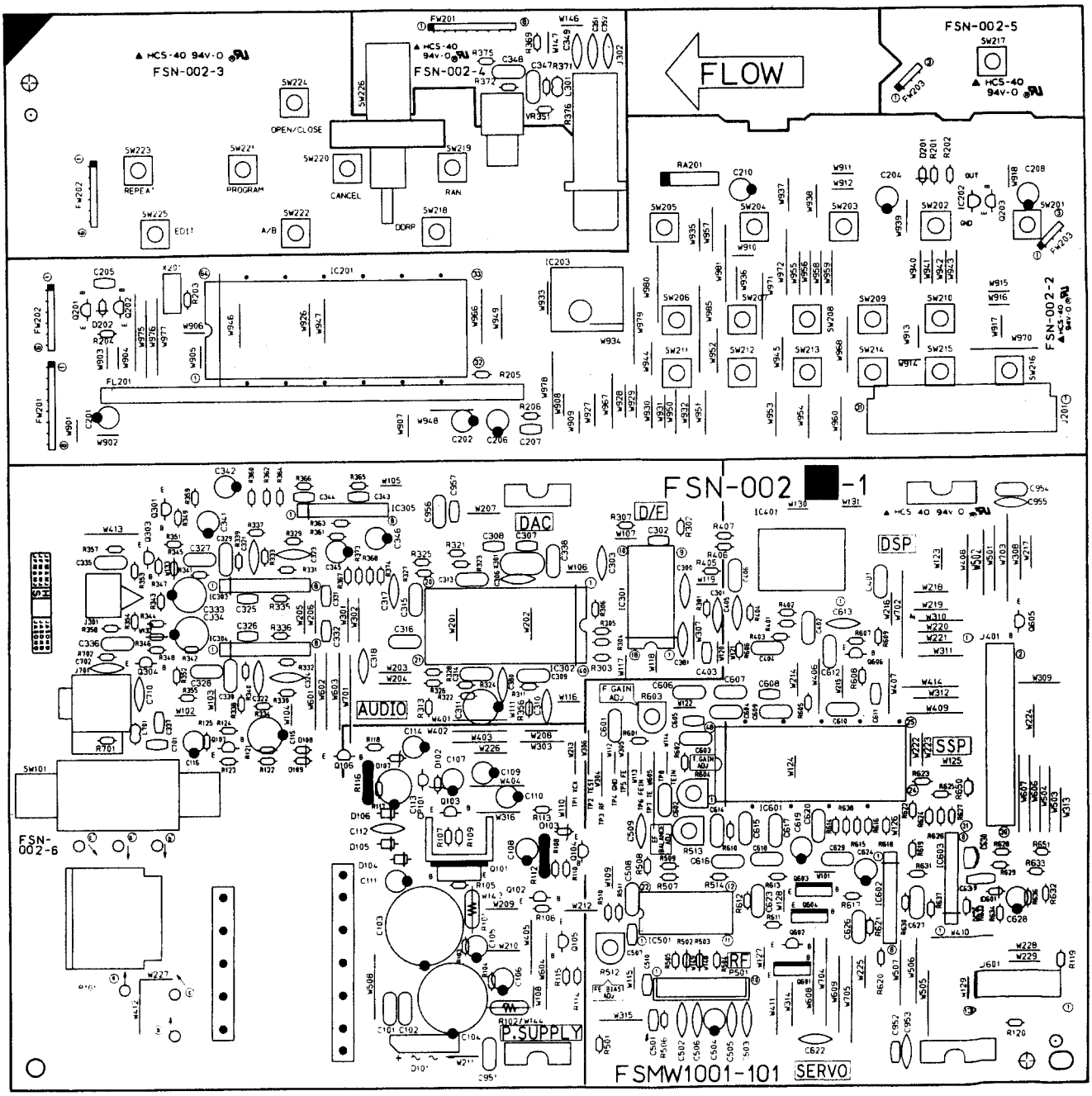
■Parts List

Item	Part Number	Part Name	Q'ty	Description	Areas
1	E26487-003	Mechanism Base	1		
2	OPTIMA-5S	Pick up Ass'y	1		
3	E74930-003	Shaft	1		
4	E306282-001	Rack Ass'y	1		
5	SPSH2050M	Screw	1		
6	E406064-002	Turn Table Ass'y	1		
7	E306275-003	Support	1		
8	SDST2005Z	Screw	1		
9	E306277-001	Holder	1		
10	SDST2004Z	Screw	2		
11	SE10351-11	Gear Ass'y	1		
11-1	E306276-001	Gear Base	1		
11-2	E75444-001	Gear	1		
11-3	E75443-001	Gear	1		
11-4	E75445-001	Gear	1		
11-5	WDM163550	Slit Washer	1		
11-6	E75494-003	Shaft	2		
11-7	E75494-002	Shaft	1		
11-8	HKN-3A6RDNV	Feed Motor	1		
11-9	E75493-001	Pinion Gear	1		
11-10	LPSH1735Z	Screw	2		
12	E72713-001	Screw	2		
13	E74539-001B	Spindle Motor	1		
14	E12114-005(S)	Circuit Board	1		
15	ESB1100-005	Leaf Switch	1	S001	
16	EMV5109-006B	6P Plug Ass'y	2	P011	
17	E75832-001	Screw	1		
18	SDSP2003N	Screw	2		
19	E306834-001	Cam	1		
20	E65923-003	Screw	3		
21	E72024-001	Speed Nut	1		
22	E75950-002	Belt	1		
23	E75984-001	Motor Pulley	1		
24	E75985-001	Gear (1)	1		
25	SPSK2640Z	Screw	2		
26	E75986-002	Gear (2)	1		
27	E75987-001	Gear (3)	1		
28	E12288-002	Loading Base	1		
29	SBSF3008Z	Screw	1		
30	E75988-001	Plate	1		
31	E306833-001	Lever	1		
32	E75989-001	Spring	1		
33	MMN-6F1LB8Q	Loading Motor	1		
34	EMW10060-002(S)	Circuit Board	1		
35	EMV7123-013R	Connector	1	13Pin	
36	EMV5109-004B	Plug Ass'y	1	4Pin	
37	ESS1200-002	Switch	1		
38	E75609-002	Insulator	1		
39	E75609-001	Insulator	2		
40	E307087-001	Elevator Base Ass'y	1		

Printed Circuit Board Ass'y and Parts List

■FSN-002 □ Main & Front PC Board Ass'y

Note : FSN-002 □ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Designated Areas
FSN-002 [A]	the U.S.A., Canada
FSN-002 [B]	Continental Europe, Scandinavia
FSN-002 [C]	Germany
FSN-002 [D]	Australia
FSN-002 [E]	the U.K.
FSN-002 [F]	Universal Type

Transistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	Q101	2SB1187(E,F)	SILICON ROHM	
	Q102	2SC2060(Q,R)	SILICON ROHM	
	Q103	2SD1302(S,T)	SILICON MATSUSHITA	
	Q104	2SA933S(R,S)	SILICON ROHM	
	Q105	2SD1302(S,T)	SILICON MATSUSHITA	
	Q106	2SA933S(R,S)	SILICON ROHM	
	Q107	2SA933S(R,S)	SILICON ROHM	
	Q201	DTA114YS	SILICON ROHM	
	Q202	DTA114YS	SILICON ROHM	
	Q203	DTA114YS	SILICON ROHM	
	Q303	2SD1302(S,T)	SILICON MATSUSHITA	
	Q304	2SD1302(S,T)	SILICON MATSUSHITA	
	Q601	2SD2037(E,F)	SILICON ROHM	
	Q602	2SA934(Q,R)	SILICON ROHM	
	Q603	2SD2037(E,F)	SILICON ROHM	
	Q604	2SB1357(E,F)	SILICON ROHM	
	Q605	DTC144ES	SILICON ROHM	
	Q606	2SC1740S(R,S)	SILICON ROHM	

⚠ : SAFETY PARTS

I. C. s

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	IC201	HD404019RB70S	I.C. HITACHI	
	IC202	MN1281(P,Q)	I.C. MATSUSHITA	
	IC203	GP1U501X	I.C. SHARP	
	IC301	CXD2554P	I.C. 1680	
	IC302	JCE4501	I.C. MATSUSHITA	
	IC303	M5218AL	I.C. MITSUBISHI	
	IC304	M5218AL	I.C. MITSUBISHI	
	IC305	VC4580L	I.C. DAINICHI	
	IC401	CXD2500AQ	I.C. 1680	
	IC501	CXA1571S	I.C. 1680	
	IC601	CXA1372S	I.C. 1680	
	IC602	STA341M(A)	I.C. SANKEN	
	IC603	M5218L	I.C. MITSUBISHI	

⚠ : SAFETY PARTS

Diodes

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
⚠	D101	S1VB20F	SILICON SINDENGEN	
	D102	MTZ5.6JB	ZENER ROHM	
	D103	MTZ6.2JC	ZENER ROHM	
	D104	1SR139-200	SILICON ROHM	
	D105	1SR139-200	SILICON ROHM	
	D106	1SR139-200	SILICON ROHM	
	D107	MTZ33JC	ZENER ROHM	
	D108	1SS133	SILICON ROHM	
	D109	1SS133	SILICON ROHM	
	D201	1SS119	SILICON HITACHI	
	D202	1SS119	SILICON HITACHI	
	D601	1SS133	SILICON ROHM	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C101	QFV81HJ-104	0.1MF 50V T.FILM	
	C102	QFV81HJ-104	0.1MF 50V T.FILM	
	C103	QETB1CM-338J7	3300MF 16V ELECTRO	
	C104	QETB1EM-228J7	2200MF 25V ELECTRO	
	C105	QETB1CM-227	220MF 16V ELECTRO	B
	C105	QETB1CM-227	220MF 16V ELECTRO	C
	C105	QETB1CM-227	220MF 16V ELECTRO	D
	C105	QETB1CM-227	220MF 16V ELECTRO	E
	C105	QETB1CM-227	220MF 16V ELECTRO	F
	C106	QETB1CM-227	220MF 16V ELECTRO	B
	C106	QETB1CM-227	220MF 16V ELECTRO	C
	C106	QETB1CM-227	220MF 16V ELECTRO	D
	C106	QETB1CM-227	220MF 16V ELECTRO	E
	C106	QETB1CM-227	220MF 16V ELECTRO	F
	C107	QETB1HM-225	2.2MF 50V ELECTRO	
	C108	QETB1HM-225	2.2MF 50V ELECTRO	
	C109	QETB0JM-227	220MF 6.3V ELECTRO	
	C110	QETB1AM-476	47MF 10V ELECTRO	
	C111	QETB1EM-107	100MF 25V ELECTRO	
	C112	QCF21HP-223	0.022MF 50V CERAMIC	
	C113	QETB1HM-107	100MF 50V ELECTRO	
	C114	QETB1HM-475	4.7MF 50V ELECTRO	
	C115	QETB1CM-227	220MF 16V ELECTRO	
	C116	QETB1CM-226	22MF 16V ELECTRO	
	C201	QETB1HM-475	4.7MF 50V ELECTRO	
	C202	QER61HM-226	22MF 50V ELECTRO	
	C204	QER50JM-107	100MF 6.3V ELECTRO	
	C205	QCBB1HK-331	330PF 50V CERAMIC	
	C206	QER51HM-475	4.7MF 50V ELECTRO	
	C207	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C208	QER51CM-476	47MF 16V ELECTRO	
	C210	QER51CM-476	47MF 16V ELECTRO	
	C300	QCF21HP-223	0.022MF 50V CERAMIC	
	C301	QCS21HJ-5R0	5PF 50V CERAMIC	
	C302	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C303	QCF21HP-223	0.022MF 50V CERAMIC	
	C306	QCS21HJ-470	47PF 50V CERAMIC	
	C307	QCT30CH-120	12PF 50V CERAMIC	
	C308	QCT30CH-3R3	3.3PF 50V CERAMIC	
	C309	QFV81HJ-104	0.1MF 50V T.FILM	
	C310	QCS21HJ-5R0	5PF 50V CERAMIC	
	C311	QETB0JM-477	470MF 6.3V ELECTRO	
	C313	QFV81HJ-104	0.1MF 50V T.FILM	
	C314	QFV81HJ-104	0.1MF 50V T.FILM	
	C315	QFV81HJ-104	0.1MF 50V T.FILM	
	C316	QFV81HJ-104	0.1MF 50V T.FILM	
	C317	QCS21HJ-221	220PF 50V CERAMIC	
	C318	QCS21HJ-221	220PF 50V CERAMIC	
	C321	QCS21HJ-121	120PF 50V CERAMIC	
	C322	QCS21HJ-121	120PF 50V CERAMIC	
	C323	QCS21HJ-121	120PF 50V CERAMIC	
	C324	QCS21HJ-121	120PF 50V CERAMIC	
	C325	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C326	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C327	QFN81HJ-392	3900PF 50V MYLAR	
	C328	QFN81HJ-392	3900PF 50V MYLAR	
	C329	QFN81HJ-223	0.022MF 50V MYLAR	
	C330	QFN81HJ-223	0.022MF 50V MYLAR	
	C331	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C332	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C333	QETB1EM-107	100MF 25V ELECTRO	
	C334	QETB1EM-107	100MF 25V ELECTRO	
	C335	QFN81HJ-562	5600PF 50V MYLAR	
	C336	QFN81HJ-562	5600PF 50V MYLAR	
	C337	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C338	QFV81HJ-104	0.1MF 50V T.FILM	
	C341	QETB1HM-475	4.7MF 50V ELECTRO	
	C342	QETB1HM-475	4.7MF 50V ELECTRO	
	C343	QCBB1HK-471	470PF 50V CERAMIC	
	C344	QCBB1HK-471	470PF 50V CERAMIC	
	C345	QETB1CM-476	47MF 16V ELECTRO	
	C346	QETB1CM-476	47MF 16V ELECTRO	
	C349	QCF21HP-223	0.022MF 50V CERAMIC	
	C351	QCF21HP-103	0.01MF 50V CERAMIC	
	C352	QCF21HP-103	0.01MF 50V CERAMIC	
	C380	QCS21HJ-5R0	5PF 50V CERAMIC	
	C381	QCS21HJ-5R0	5PF 50V CERAMIC	
	C401	QCZ0202-155A	1.5MF 25V CERAMIC	
	C402	QFN81HJ-473	0.047MF 50V MYLAR	
	C403	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C404	QFN81HJ-152	1500PF 50V MYLAR	
	C405	QCF21HP-102	1000PF 50V CERAMIC	
	C406	QCZ0202-155A	1.5MF 25V CERAMIC	
	C501	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C502	QCS21HJ-100	10PF 50V CERAMIC	
	C503	QCS21HJ-100	10PF 50V CERAMIC	
	C504	QETB1AM-476	47MF 10V ELECTRO	
	C505	QCS21HJ-820	82PF 50V CERAMIC	
	C506	QCS21HJ-101	100PF 50V CERAMIC	
	C507	QCHB1EZ-223	0.022MF 25V CERAMIC	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C508	QCZ0202-155A	1.5MF 25V CERAMIC	
	C509	QCS21HJ-220	22PF 50V CERAMIC	
	C510	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C601	QFN81HJ-182	1800PF 50V MYLAR	
	C603	QFN81HJ-222	2200PF 50V MYLAR	
	C604	QFN81HJ-222	2200PF 50V MYLAR	
	C605	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C606	QFN81HJ-333	0.033MF 50V MYLAR	
	C607	QFN81HJ-103	0.01MF 50V MYLAR	
	C608	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C609	QFN81HJ-333	0.033MF 50V MYLAR	
	C610	QCZ0202-155A	1.5MF 25V CERAMIC	
	C611	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C612	QFV81HJ-104	0.1MF 50V T.FILM	
	C613	QCS21HJ-471	470PF 50V CERAMIC	
	C614	QFN81HJ-104	0.1MF 50V MYLAR	
	C615	QFN81HJ-333	0.033MF 50V MYLAR	
	C616	QFN81HJ-473	0.047MF 50V MYLAR	
	C617	QFN81HJ-473	0.047MF 50V MYLAR	
	C618	QFN81HJ-473	0.047MF 50V MYLAR	
	C619	QETB1HM-475	4.7MF 50V ELECTRO	
	C620	QFN81HJ-104	0.1MF 50V MYLAR	
	C622	QCF21HP-223	0.022MF 50V CERAMIC	
	C623	QFN81HJ-563	0.056MF 50V MYLAR	
	C624	QETB1EM-106	10MF 25V ELECTRO	
	C626	QFN81HJ-183	0.018MF 50V MYLAR	
	C627	QFN81HJ-103	0.01MF 50V MYLAR	
	C628	QETB1HM-475	4.7MF 50V ELECTRO	
	C629	QFN81HJ-333	0.033MF 50V MYLAR	
	C630	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C631	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C701	QCBB1HK-101	100PF 50V CERAMIC	
	C702	QCF21HP-103	0.01MF 50V CERAMIC	A
	C710	QCS21HJ-101	100PF 50V CERAMIC	
	C951	QCZ0202-155A	1.5MF 25V CERAMIC	
	C953	QCS21HJ-180	18PF 50V CERAMIC	
	C955	QCF21HP-472	4700PF 50V CERAMIC	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
⚠	R101	PTH61G30BD2R2N	FUSIBLE	B
⚠	R101	PTH61G30BD2R2N	FUSIBLE	C
⚠	R101	PTH61G30BD2R2N	FUSIBLE	D
⚠	R101	PTH61G30BD2R2N	FUSIBLE	E
⚠	R101	PTH61G30BD2R2N	FUSIBLE	F
⚠	R102	PTH61G30BD2R2N	FUSIBLE	B
⚠	R102	PTH61G30BD2R2N	FUSIBLE	C
⚠	R102	PTH61G30BD2R2N	FUSIBLE	D
⚠	R102	PTH61G30BD2R2N	FUSIBLE	E
⚠	R102	PTH61G30BD2R2N	FUSIBLE	F
	R103	QRD167J-104	100K 1/6W CARBON	
	R104	QRD167J-104	100K 1/6W CARBON	
	R105	QRD167J-222	2.2K 1/6W CARBON	
	R106	QRD167J-222	2.2K 1/6W CARBON	
	R107	QRD167J-221	220 1/6W CARBON	
	R108	QRD167J-221	220 1/6W CARBON	
	R109	QRD167J-221	220 1/6W CARBON	
	R110	QRD167J-221	220 1/6W CARBON	
⚠	R112	QRZ0077-100	10 1/4W FUSIBLE	
	R113	QRD167J-331	330 1/6W CARBON	
	R114	QRD167J-202	2K 1/6W CARBON	
	R115	QRD167J-103	10K 1/6W CARBON	
⚠	R116	QRZ0077-560	56 1/4W FUSIBLE	
	R117	QRD167J-202	2K 1/6W CARBON	
	R118	QRD167J-121	120 1/6W CARBON	
	R119	QRD167J-152	1.5K 1/6W CARBON	
	R120	QRD167J-152	1.5K 1/6W CARBON	
	R121	QRD167J-221	220 1/6W CARBON	
	R122	QRD167J-221	220 1/6W CARBON	
	R123	QRD167J-822	8.2K 1/6W CARBON	
	R124	QRD167J-683	68K 1/6W CARBON	
	R125	QRD167J-221	220 1/6W CARBON	
	R201	QRD167J-821	820 1/6W CARBON	
	R202	QRD167J-103	10K 1/6W CARBON	
	R203	QRD167J-105	1M 1/6W CARBON	
	R204	QRD167J-472	4.7K 1/6W CARBON	
	R205	QRD167J-103	10K 1/6W CARBON	
	R206	QRD167J-473	47K 1/6W CARBON	
	R301	QRD167J-101	100 1/6W CARBON	
	R302	QRD167J-472	4.7K 1/6W CARBON	
	R303	QRD167J-102	1K 1/6W CARBON	
	R304	QRD167J-102	1K 1/6W CARBON	
	R305	QRD167J-102	1K 1/6W CARBON	
	R306	QRD167J-102	1K 1/6W CARBON	
	R307	QRD167J-472	4.7K 1/6W CARBON	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R311	QRD167J-221	220 1/6W CARBON	
	R313	QRD167J-101	100 1/6W CARBON	
	R321	QRD167J-183	18K 1/6W CARBON	
	R322	QRD167J-183	18K 1/6W CARBON	
	R323	QRD167J-183	18K 1/6W CARBON	
	R324	QRD167J-183	18K 1/6W CARBON	
	R325	QRD167J-183	18K 1/6W CARBON	
	R326	QRD167J-183	18K 1/6W CARBON	
	R327	QRD167J-183	18K 1/6W CARBON	
	R328	QRD167J-183	18K 1/6W CARBON	
	R329	QRD167J-273	27K 1/6W CARBON	
	R330	QRD167J-273	27K 1/6W CARBON	
	R331	QRD167J-273	27K 1/6W CARBON	
	R332	QRD167J-273	27K 1/6W CARBON	
	R333	QRD167J-333	33K 1/6W CARBON	
	R334	QRD167J-333	33K 1/6W CARBON	
	R335	QRD167J-333	33K 1/6W CARBON	
	R336	QRD167J-333	33K 1/6W CARBON	
	R337	QRD167J-561	560 1/6W CARBON	
	R338	QRD167J-561	560 1/6W CARBON	
	R339	QRD167J-511	510 1/6W CARBON	
	R340	QRD167J-511	510 1/6W CARBON	
	R341	QRD167J-183	18K 1/6W CARBON	
	R342	QRD167J-183	18K 1/6W CARBON	
	R343	QRD167J-273	27K 1/6W CARBON	
	R344	QRD167J-273	27K 1/6W CARBON	
	R347	QRD167J-331	330 1/6W CARBON	
	R348	QRD167J-331	330 1/6W CARBON	
	R351	QRD167J-103	10K 1/6W CARBON	
	R352	QRD167J-103	10K 1/6W CARBON	
	R353	QRD167J-151	150 1/6W CARBON	
	R354	QRD167J-151	150 1/6W CARBON	
	R355	QRD167J-473	47K 1/6W CARBON	
	R356	QRD167J-560	56 1/6W CARBON	B
	R356	QRD167J-560	56 1/6W CARBON	C
	R356	QRD167J-560	56 1/6W CARBON	D
	R356	QRD167J-560	56 1/6W CARBON	E
	R356	QRD167J-560	56 1/6W CARBON	F
	R357	QRD167J-561	560 1/6W CARBON	
	R358	QRD167J-561	560 1/6W CARBON	
	R359	QRD167J-473	47K 1/6W CARBON	
	R360	QRD167J-473	47K 1/6W CARBON	
	R361	QRD167J-103	10K 1/6W CARBON	
	R362	QRD167J-103	10K 1/6W CARBON	
	R363	QRD167J-273	27K 1/6W CARBON	
	R364	QRD167J-273	27K 1/6W CARBON	
	R365	QRD167J-562	5.6K 1/6W CARBON	
	R366	QRD167J-562	5.6K 1/6W CARBON	
	R367	QRD167J-271	270 1/6W CARBON	
	R368	QRD167J-271	270 1/6W CARBON	
	R369	QRD167J-680	68 1/6W CARBON	
	R371	QRD167J-390	39 1/6W CARBON	
	R372	QRD167J-390	39 1/6W CARBON	
	R373	QRD167J-271	270 1/6W CARBON	
	R374	QRD167J-271	270 1/6W CARBON	
	R375	QRD167J-680	68 1/6W CARBON	
	R401	QRD167J-332	3.3K 1/6W CARBON	
	R402	QRD167J-682	6.8K 1/6W CARBON	
	R403	QRD167J-103	10K 1/6W CARBON	
	R404	QRD167J-113	11K 1/6W CARBON	
	R405	QRD167J-102	1K 1/6W CARBON	
	R406	QRD167J-102	1K 1/6W CARBON	
	R407	QRD167J-102	1K 1/6W CARBON	
	R501	QRD167J-102	1K 1/6W CARBON	
	R504	QRD167J-183	18K 1/6W CARBON	
	R505	QRD167J-183	18K 1/6W CARBON	
	R506	QRD167J-121	120 1/6W CARBON	
	R507	QRD167J-752	7.5K 1/6W CARBON	
	R508	QRD167J-332	3.3K 1/6W CARBON	
	R509	QRD167J-682	6.8K 1/6W CARBON	
	R510	QRD167J-122	1.2K 1/6W CARBON	
	R511	QRD167J-103	10K 1/6W CARBON	
	R512	QVPA601-203A	20K VARIABLE	
	R513	QVPA601-203A	20K VARIABLE	
	R514	QRD167J-103	10K 1/6W CARBON	
	R601	QRD167J-472	4.7K 1/6W CARBON	
	R602	QRD167J-472	4.7K 1/6W CARBON	
	R603	QVPA601-203A	20K VARIABLE	
	R604	QVPA601-203A	20K VARIABLE	
	R605	QRD167J-102	1K 1/6W CARBON	
	R606	QRD167J-104	100K 1/6W CARBON	
	R607	QRD167J-103	10K 1/6W CARBON	
	R608	QRD167J-183	18K 1/6W CARBON	
	R609	QRD167J-183	18K 1/6W CARBON	
	R610	QRD167J-224	220K 1/6W CARBON	
	R611	QRD167J-2R2	2.2 1/6W CARBON	
	R612	QRD167J-823	82K 1/6W CARBON	
	R613	QRD167J-124	120K 1/6W CARBON	
	R614	QRD167J-2R2	2.2 1/6W CARBON	
	R615	QRD167J-224	220K 1/6W CARBON	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R616	QRD167J-333	33K 1/6W CARBON	
	R617	QRD167J-123	12K 1/6W CARBON	
	R618	QRD167J-514	510K 1/6W CARBON	
	R619	QRD167J-2R2	2.2 1/6W CARBON	
	R620	QRD167J-183	18K 1/6W CARBON	
	R621	QRD167J-363	36K 1/6W CARBON	
	R622	QRD167J-124	120K 1/6W CARBON	
	R623	QRD167J-472	4.7K 1/6W CARBON	
	R626	QRD167J-153	15K 1/6W CARBON	
	R627	QRD167J-333	33K 1/6W CARBON	
	R628	QRD167J-752	7.5K 1/6W CARBON	
	R629	QRD167J-752	7.5K 1/6W CARBON	
	R630	QRD167J-333	33K 1/6W CARBON	
	R631	QRD167J-470	47 1/6W CARBON	
	R632	QRD167J-513	51K 1/6W CARBON	
	R633	QRD167J-513	51K 1/6W CARBON	
	R634	QRD167J-683	68K 1/6W CARBON	
	R635	QRD167J-683	68K 1/6W CARBON	
	R636	QRD167J-684	680K 1/6W CARBON	
	R637	QRD167J-470	47 1/6W CARBON	
	R638	QRD167J-184	180K 1/6W CARBON	
	R650	QRD167J-103	10K 1/6W CARBON	
	R651	QRD167J-103	10K 1/6W CARBON	
	R701	QRD167J-471	470 1/6W CARBON	
	RA201	QRB045J-473	47K 1/8W R.NETWORK	
	VR351	QVAB99C-E53B	5K VARIABLE	

⚠ : SAFETY PARTS

Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
		E306805-010	SPACER	
		E306951-221SS	FL DISPLAY HOLDER	
		E65396-003	EARTH PLATE	
		E70306-001	HEAT SINK	
		E75464-221SS	EARTH PLATE	
		FSMW1001-001	PRINTED BOARD	
		SBSG3008CC	SCREW	
		QSS1L22-E01	SLIDE SWITCH	F
		QWE880-10RR	VINYL WIRE	F
		QWE882-10RR	VINYL WIRE	F
		QWE886-10RR	VINYL WIRE	F
	J201	VMC0161-R31	MALE CONNECTOR(3PIN)	
	J301	EMN00TV-219AJ2	2P PIN JACK	
	J302	QMS6302-131	HEADPHONE JACK(3PIN)	
	J401	VMC0161-031	CONNECT TERMINAL(13PIN)	
	J601	VMC0161-013	MALE CONNECTOR(10PIN)	
	J701	QMS3501-020	MINI JACK	
	L301	EQL4004-1R0	INDUCTOR	
	L701	EQL4004-1R0	INDUCTOR	
	P101	QMCB001-E03H	AC INLET	A
	P101	QMCB001-E02H	AC SOCKET	B
	P101	QMCB001-E02H	AC SOCKET	C
	P101	QMCB001-E02H	AC SOCKET	D
	P101	QMCB001-E02HBS	AC SOCKET	E
	P101	QMCB001-E02H	AC SOCKET	F
	P501	EMV5109-010A	PLUG ASSY	
	X201	ECX0004-194KM	RESONATOR	
	X301	ECX0169-344KL	RESONATOR	
⚠	CP101	ICP-N15	I.C. PROTECTOR	
	FL201	ELU0001-114	FL TUBE	
	FW201	VWS108-214K4K	FLAT WIRE	
	FW202	VWS106-184K4K	FLAT WIRE	
	FW203	EWR33A-08NN	FLAT WIRE	
	SW201	ESP0001-018	TACT SWITCH(STOP/CLEAR)	
	SW202	ESP0001-018	TACT SWITCH(FOWARD SKIP)	
	SW203	ESP0001-018	TACT SWITCH(BACKWARD SKIP)	
	SW204	ESP0001-018	TACT SWITCH(FOWARD SCAN)	
	SW205	ESP0001-018	TACT SWITCH(BACKWARD SCAN)	
	SW206	ESP0001-018	TACT SWITCH(1) PRESET	
	SW207	ESP0001-018	TACT SWITCH(2)	
	SW208	ESP0001-018	TACT SWITCH(3)	
	SW209	ESP0001-018	TACT SWITCH(4)	
	SW210	ESP0001-018	TACT SWITCH(5)	
	SW211	ESP0001-018	TACT SWITCH(6)	
	SW212	ESP0001-018	TACT SWITCH(7)	
	SW213	ESP0001-018	TACT SWITCH(8)	
	SW214	ESP0001-018	TACT SWITCH(9)	
	SW215	ESP0001-018	TACT SWITCH(10)	
	SW216	ESP0001-018	TACT SWITCH(+10)	
	SW217	ESP0001-018	TACT SWITCH(PLAY/PAUSE)	
	SW218	ESP0001-018	TACT SWITCH(DDRP)	
	SW219	ESP0001-018	TACT SWITCH(RAN)	
	SW220	ESP0001-018	TACT SWITCH(CANCEL)	
	SW221	ESP0001-018	TACT SWITCH(PROGRAM)	
	SW222	ESP0001-018	TACT SWITCH(A/B)	

⚠ : SAFETY PARTS

Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	SW223	ESP0001-018	TACT SWITCH(PRESET)	
	SW224	ESP0001-018	TACT SWITCH(OPEN/CLOSE)	
	SW225	ESP0001-018	TACT SWITCH(EDIT)	
	SW226	QST4101-E20	PUSH SWITCH(POWER)	

⚠ : SAFETY PARTS

Accessories List

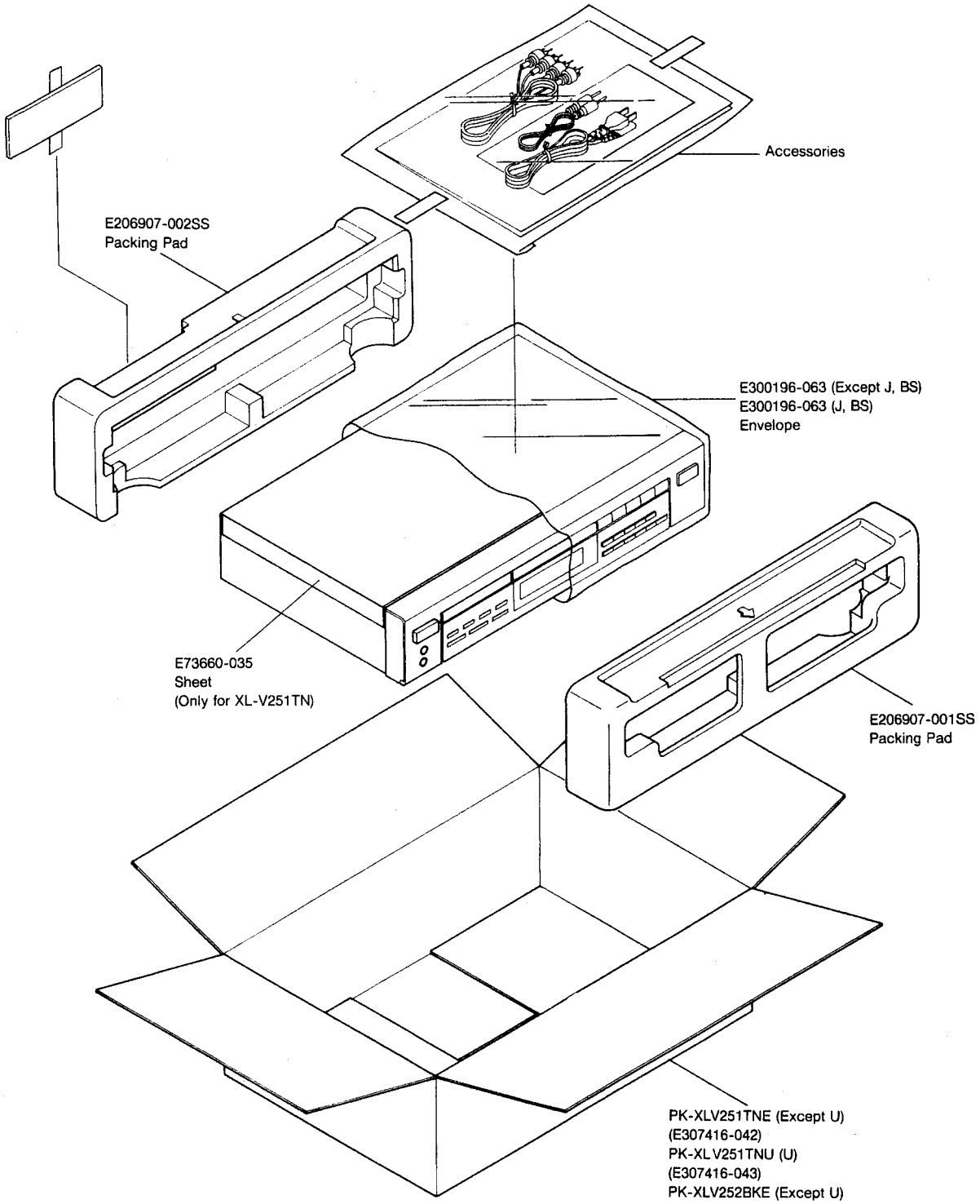
⚠	Part Number	Part Name	Q'ty	Description	Areas
	E30580-1829B	Instruction Book	1		J, A, BS
	E30580-1802A	Instruction Book	1		C, U, EF, G
	E30580-1864A	Instruction Book	1		EN
	BT-20025K	Warranty Card	1		C
	BT20060	Warranty Card	1		BS
	BT-20117	Warranty Card	1		G
	BT-20122	Warranty Card	1		A
	BT-20122-1	Sticker	1		A
	BT-20047F	Warranty Card	1		J
	BT-20108A	Service Information	1		J
	BT20071A	Service Center List	1		C
	BT-20044G	Safety Instruction Sheet	1		J
	BT20066A	EEC Agency	1		BS
	E66416-003	Envelope	1	for Warranty Card	J
	E43486-340A	Safety Sheet	1		BS
	E35497-022	Caution Sheet	1	220V	U
⚠	E04056	Siemens Plug	1		U
	EWP302-011	Signal Cord	1		
	EWP805-001	1P Plug Cord	1		
⚠	QMP1E00-183J5	Power Cord	1		J, C
⚠	QMP7530-183	Power Cord	1		U
⚠	QMP39G0-183E	Power Cord	1		EN, EF, G
⚠	QMP25C0-183	Power Cord	1		A
⚠	QMP5510-183BS	Power Cord	1		BS
	RM-SX251U	Remote Controller	1		
	UM-4NJ-2PSA	Battery	1		
	E300196-010	Envelope	1		Except J, BS
	E300196-010B	Envelope	1		J, BS

⚠: Safety Parts

The Marks Designated Areas

J·····the U.S.A.
C·····Canada
A·····Australia
G·····Germany
BS·····the U.K.
EN·····Scandinavia
EF·····Continental Europe
U·····Universal Type
No mark indicates all areas.

Packing Materials and Part Numbers



The Marks Designated Areas	
J.....the U.S.A.	EN.....Scandinavia
C.....Canada	EF.....Continental Europe
A.....Australia	U.....Universal Type
G.....Germany	No mark indicates all areas.
BS.....the U.K.	